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THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

CXXVII.—No. 4268. NOVEMBER 21, 1924.

THE PALACE OF ART, WEMBLEY

THE large numbers who visited this exhibition helped to show that there is a real interest for art in the general public, and it is instructive in an exhibition so comprehensive to consider what are the prevailing impressions to be gained from it. In the art of the past we perceive that each great period has received its impetus from the prevailing beliefs of the time, and after the Reformation the home, the civic life and domestic art occupied the place of the earlier more ecclesiastically-inspired interpretations. In the multitudes of examples shown in the Palace of Art it was difficult to connect the expression, or subject matter, with any such governing impulse, and its eclecticism was its distinguishing feature, while its attachments to life and belief were not of much account. This raises issues of very great moment in considering the present state of Empire art. There has been, over a considerable number of years, a broadening of the scope of subject matter, to include in it new psychological manifestations—abnormality as well as the ugly.

There is, however, another view of the matter which claims that as the active principle in religion is beauty, so this applied to the creative arts finds their beauty to lie in the right combination of things themselves beautiful. When that attitude to life ceased to govern, it was gradually replaced by representation, and the externals of craftsmanship applied to the combination of things not in themselves beautiful. The field of presentation thus gained in variety what it lost in direction. Direction, therefore, becomes of paramount importance and will be determined by what we find best in life. For the beauty of art is not that of nature, though reached through its inspiration; and it appears to us that only in exceptional cases—and there were certain notable exceptions—was there any variation in this exhibition from the level of naturalistic painting, in which nature is seen to be the raw material for our craftsmanship rather than for our affection. In the sculpture galleries we saw, however, another influence, less desirable—that of the grandiose, the endeavour to lift the commonplace of unendowed approach by violent exaggeration of action. A glance through this gallery revealed sculpture figuratively standing on its head, in a violent commotion of strained bodies, legs, and arms, much in need of the drill sergeant. And it was almost as though we entered into another world, to find amidst all this hurricane, a figure so tranquil, so charming, and entirely noble as the statue of a girl (bronze) by David MacGill. There was more comprehension in this one statue (for does it not include the type of all noble maidenhood ?) than endless incident or narrative could embody, and it may be regarded as the personification of an ideal—but it was more than this: it was Greek, Italian, modern, in that it gathered up all that at any time has been included and so belongs to all time.

As has been so truly said, the artist always paints himself—his own nobility, his own affections, his own character—and it is all the more noticeable that so large an amount of the work shown hardly revealed him at all. It was seen so vividly in the various galleries that we were looking at the craft of painting only, and that the art was somehow not there.

If we passed to the galleries representing Indian Art, we saw two statues, "To the Temple" (plaster) and "To the Well" (plaster), by S. G. Mhartri: the former in its own way as vital and beautiful as Mr. MacGill's statue was in another, though the latter embodied a more developed culture in that a higher beauty becomes reincarnated from the physical, which dominates more in Mhartri's work. There was a quite remarkable significance in this little figure at a time when the Europeanising of Indian art is proceeding, and it exemplified the fundamental differences of national character in the preservation of which, whether for England or India, is contained the security for art. And the difference was not one of technical resources, for the Indian sculptor was as capable of realisation and had as complete mastery of his material as Mr. MacGill. The result, however, emerged in a form as different as is the palm tree from the elm.

The problem of the evolution of the arts, and the preservation of type within them is thus exemplified in a very interesting way. Cosmopolitanism, which reacts with similar effect as has the industrial revolution on industry, tends with disintegrating force to override national characteristics. The patriotic idea replaces nationality, and grasping only at externals like the over-insistence of the State, it submerges individuality: national characteristics and political patriotism being often found, their ideas being destructive of each other, in complete antagonism. There was no evidence of Indian characteristics in the painted frieze recently reproduced in a daily paper by the Indian Society, and what is left where these are superseded ? It has not the virtues of Occidental tradition, and is divorced from its own. Only where this racial identity is preserved can the arts be said to retain any real life. In the Burmese Section the picture "Industry," Burmah, by B. A. Nyan, which might have been the work of any Academy student, exemplified in a startling way the consequences of Europeanising native arts at a time when its industrialism has obscured the true issues. Art can only be encouraged when the spiritual is enthroned above machinery.

The ecclesiastical exhibits were shown in a church built in the Basilica form, so as to provide a setting for the various exhibits. The restless competition of stained glass and altars where there is no co-ordinating idea to unite them, took away the repose that should belong to such surroundings, and was opposed to the objects it had to serve, and it may be doubted whether under such circumstances the best interests of religious art are at all well promoted. It was all, however, on the whole very orthodox, though hardly corresponding in its inwardness with the new spirit in the Church to-day; the emphasis resting on craft with very little compelling human interest. We felt in such surroundings that with any entrance of a more vital spirit, there would go up the cry once again, "Great is Diana of the Ephesians," against new interpretation and life force which threatened its security. The craftsmanship, so far as it went, was all complete enough—if only that were enough—but we are looking to-day for new interpretations to rekindle the life spirit and relate it all to human welfare.

The Bishop of Liverpool, when speaking in the Cathedral on a recent occasion, declared it open to "all men of good will without regard to creed or manner." There was only too evident in the examples shown an over-emphasis of manner at the cost of content. While there has been so much talk in recent years of craft ideals, how many, we wonder, of the stained glass windows were painted by the artist himself ? Yet how slight is the hold on intimate expression where this is not the case, and treatment is so little regarded that it can be delegated in such a way. It is not a question of what was done in the past; the present age calls for a conviction, deepened and strengthened from what has gone before, if art is to do its part, and there is danger lest the craftsman should disregard this new spirit in the Church itself which finds life more than art, and the only force worthy to inspire it.

NOTES.

Labour in the Building Trade.

THE *Times*, on the 17th instant, published extracts from an article by Mr. George Hicks in the *Labour Press Service* which contains a defence of building operatives who, he says, are loyally co-operating with the responsible authorities in an endeavour to carry out existing schemes successfully. He complained of "ignorant and often spiteful criticism" of the building operatives, and says that in many minds it is almost an article of faith that building union rules and slackness on the part of bricklayers are jointly responsible for the building shortage, but no attempt is made to bring the objectionable rules to light, and the charge of slackness is repeated in defiance of employers' admissions that production is well up to pre-war standard. We have yet to see the admission of any employer that output is up to the level of what could easily be attained. Mr. Hicks, however, goes on to say that the facts that lend colour to the above charges are the rejection of dilution and changes in building methods that have varied the proportion between skilled and unskilled labour. He approaches this question of dilution at first in a more business-like manner, declaring that the partially-trained man is uneconomic in the building industry, which is the farthest of all big industries from being adaptable to extreme sub-division of labour, and contends that so far as certain kinds of unskilled help might be found economic it is adequately provided by the apprentice. But he soon lays aside this more statesmanlike attitude and goes on to say that obviously the trade union objection to dilution is that it creates a floating reserve of half-trained men who could be "made do with," at a loss, in times of industrial dispute, when the small employer and his sons might carry on with such aid, and dilution is, in fact, a form of union smashing, and is of little use for anything else.

The Public Need.

THIS latter argument rather lets the cat out of the bag, and explains the very narrow view taken by the unions of the national necessity. What could be more futile than such an argument? We have an industry which cannot meet the demand for the product it is engaged upon, there is a certain and increasing demand for what it could produce, and it is under-manned, yet its ranks are not to be increased or any step to be taken to meet the demand except by the slow process of training apprentices! And for what reason? Because in case a labour dispute should arise the men in course of training might not be subject to union discipline! Mr. Hicks concludes his article with a sort of threat to the public: "If the public need is exploited in the interests of a barefaced union-smashing campaign, the reaction will be as calamitous as it is prompt," but Mr. Hicks must use a stronger argument than he has done if he wishes to convince the public who are waiting for houses that the building trade operatives are playing their part. As we have pointed out before, the building operatives are playing a very dangerous game as regards their own real interest in standing in the way of developing a trade for which there is a public need. Other methods will be discovered and the building operative will be superseded, and the union smashing will be not that which Mr. Hicks anticipates and fears, but the smashing of the industry itself by the unions, who are failing to take a long view of things and are concentrating on the reactionary policy themselves. They are living in a fool's paradise, for no nation would submit to their dictation and go without houses to please them, and other men and other methods are certain to be adopted and the building operative must inevitably suffer.

Higher Buildings Again.

LIBERTY, it has been said, is the reward of eternal vigilance, and if the London we know is to retain its traditions of character and not to be violently uprooted from the past, the pressure now being brought to bear will need to be carefully watched. If for no other reason—and there are reasons enough—there are very strong objections to using for further business and residential purposes the centre of London, already so congested. To add to the pressure already existing by attracting many more people to the centre appears to us not to solve any traffic problems, but rather to add to them, and to contradict the aim of those who looked to reduce the pressure on the capital. To coop more and more people up in the congested central area of London, at a time when we believe there is a strong reaction from the belief in such high buildings in New York and Chicago on account of the congestion they entail, the reduction of air and sunlight, with consequent loss of health, is something more than a prejudice "against the adequate development of Central London." No doubt, on a money computation only, such buildings would pay; but there are other considerations besides providing additional security "upon which municipal loans can be raised." A great city claims from us an outlook of more enlightened character if we are to allow what is owing to tradition and the past. We trust that the County Council, who have shown their appreciation of a larger view than that of providing "additional security for loans," will make haste very slowly in this matter, realising that there are other considerations than those of the utilitarian to be included, which tell against the proposals rather than in favour of them.

Housing Dangers.

A CORRESPONDENT writes: "We are accustomed to recognise the truth of cutting our coat according to the amount of the cloth, and if we cannot afford cloth to fall back on fustian. Ideals in building which prevent us from building, or throw it into the arms of the mass producer, hardly serve the purpose of those who desire to see us freed from the standardising which is so unsightly. The courage to build cheap houses may be a better thing than the idealism which, in present financial embarrassment, may prevent us from building any. We have in mind a housing scheme carried out by a local authority, which is subject to criticism by architects because the wood-work is very thin and the construction is not such as will secure centuries of existence for it; but the houses themselves have none the less something human and habitable in their

Photo: Mr. C. L. Gill, F.R.I.B.A.

Doorway in Rome: Entrance Front Via Sistina.

Photo: Mr. C. L. Gill, F.R.I.B.A.

Entrance to Vatican Gallery, Rome.

characteristics, as a man may appear not unbecomingly dressed in clothes that were not fabricated in Savile Row. We think it desirable to press this point of building cheaply—and, therefore, rather temporarily—and yet not in an altogether unsightly way. If architects will yield their ideals for building to the necessities of the time, we may be saved the mechanical standardisation of our housing which now threatens us. We seem to need a little more initiative in the profession to meet us on rather lower ground than the heights of architecture—if it is lower ground—and we may then find that there is a quality to be found in cheapness, too, when it is directed by a mind adjusted to the difficulties of the present time. There is real danger that mass production may intervene and capture the ground, unless the architect can offer an alternative at a cost which will enable his better appreciation of housing amenities to prevail."

"No Architect Required."

MR. GEOFFREY WATSON, writing in the *Times* of the 17th, reminds us that "No architect, no skilled labour, is required to build cottage property, and never was employed, until local authorities stepped into the arena of the speculative builder." We do not know what the speculative builder will say on being told that he, who generally worked with his own hands, was not skilled. We can hardly think of anyone more skilled. And as to the non-employment of architects, we can only lament that Mr. Watson should be ignorant of the distinction between "building" and "architecture," and should fail to realise that a cottage that is architectural (in other words, comely and pleasing) need cost no more than one that is ugly and monotonous; that the ugly houses of twenty-five years ago, which Mr. Watson seems to admire, were demoralising because of their ugliness; and that the architect's contribution in cottage design is therefore vital to the moral welfare of the community.

St. Dunstan's.

THE architect's waste-paper basket must be ample and receptive. Every day it engulfs the obliging money-lender and a dozen patents. Many hands must, however, have hesitated to consign to destruction the circular issued during Armistice Week by St. Dunstan's, asking architects to recommend the door mats being made by 800 ex-soldiers who were blinded in the war. "Every house, factory, warehouse, and building," we are reminded, "requires a mat." St. Dunstan's is peculiarly British; it touches not only the sentiment of patriotic sympathy, but the practical worth of self-help turning out good things. We make no apology for this reminder to those who may too hastily have thrown away the appeal. If they have not the opportunity to recommend the door mats, they may need a new waste-paper basket, and these St. Dunstan's, if we are not mistaken, can also supply.

Road Names.

WE note that the Housing Committee has recommended to the London County Council that the reconstructed estate at Hickman's Folly, in Bermondsey, should be called "Dickens' Estate." The principle of giving streets and dwellings names in some way connected with the history of the district is a good one, and will, no doubt, lead to monographs in the distant future on our 1924 inventions. The fact that the estate at Acton Wells was built on a golf course is commemorated in such street names as "Long Drive" and "Brassey-avenue." Just as a name may make or mar a play, so the importance of good street naming should not be overlooked. "Twenty-first-street" and "Twenty-second-street" may be examples of business-like method, but there is little of interest or romance in such titles. Even "Daisy-street" and "Dandelion-road" would provide more character, although haphazard and sentimental naming indicates a sad lack of imagination.

Acoustics.

MR. HOPE BAGENAL'S researches on acoustics, some aspects of which he outlined in his paper read before the Royal Institute of British Architects on Monday, should be of great value to the architectural profession, for the problem is not confined solely to schools, churches, concert halls, and such-like buildings, but the comfort of the occupants of offices and houses on busy and noisy roads can be increased if the principles of acoustic design be applied. The extent of the acoustic difficulties in the Law Courts was brought home by Mr. Bagenal when he related an incident which happened when he was a visitor there: Complaints had been made of the echo in the room, and the judge mentioned that on a previous occasion the clerk to the court, in taking down evidence, had actually added the echo to the original sentence. It is interesting to remember that the whole of the competition designs submitted for the Law Courts were Gothic, which, Mr. Bagenal said, is the worst possible form of building for carrying the human voice, although the long reverberation often adds to the effect of church music.

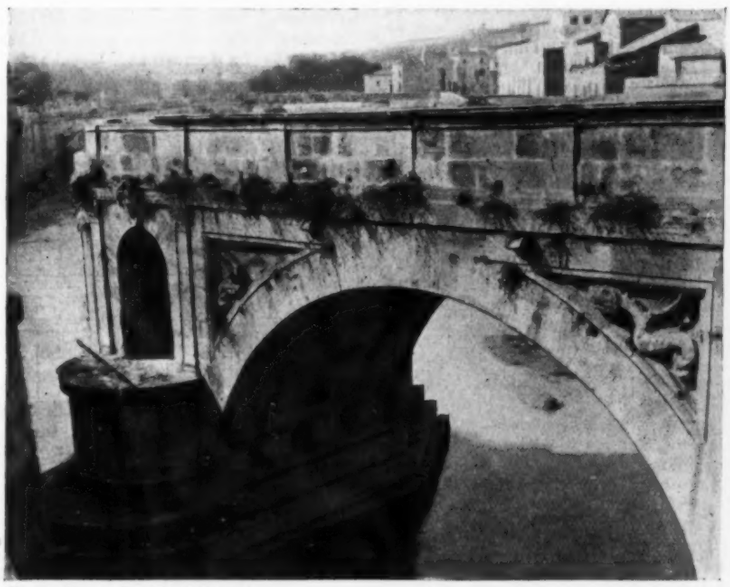


Photo: Mr. C. L. Gill, F.R.I.B.A.

Remains of Roman Bridge over Tiber.

GENERAL NEWS

Professional Announcement.

The Smethwick T.C., after interviewing seven candidates for the appointment of architect, has appointed Mr. Seth Stephens, of Birmingham, to the position.

Obituary.

The death has taken place, at Herne's Nest, Bewdley, in his 57th year, of Mr. Mark Round, a retired timber merchant. He was for several years a member of the Old Hill Urban District Council.

The death was announced recently of Mr. Thomas Simpson, 78, builder, of East Dulwich, who was responsible for restorations at St. Saviour's Cathedral, Southwark, the Royal Naval Hospital, Bancroft Grammar School at Woodford Green, and King's College Hospital.

Town Planning in the Malay States.

We have received the third annual report of the Government Town Planner of the Federated Malay States. Part I gives general remarks and illustrations on town planning progress in the Federated Malay States, and Part II particulars of work and development during 1923.

Architects' Estates.

Mr. Frederick Meakin (84), of Windlesham-gardens, Brighton, and late of Martin's-lane, Cannon-street, E.C. (net personalty, £20,813), £24,991.

Mr. John B. Jones, Alexandra-road, Colwyn Bay. Net personalty £1,535; gross, £39,117.

Lectures on Christian Arts.

A free University (Iolscoil na-h Eireann) has, in spite of political divergencies, been established in Dublin. Its programme includes several subjects not dealt with by the other Irish Universities. Count Plunkett, Hon.A.R.I.B.A., the former Director of the National Museum, has already started his course of lectures on Christian Art in the Iolscoil.

Labour Shortage.

Mr. E. D. Simon, speaking recently on housing at the National Liberal Club, London, said that from the day of the Armistice the shortage of skilled labour in the building trades had been the chief difficulty that counted in connection with the housing question. They could build 100,000 houses a year, and the extra 100,000 necessary for meeting the minimum national requirements could not be provided, although there were over a million people unemployed. The question of apprenticeship would have to be dealt with as a business proposition, and he suggested that the matter should be made the subject of a special inquiry.

LABOUR FOR HOUSING

MR. JAMES RANSOME, F.R.I.B.A., of 21, Suffolk-street, London, S.W. 1, writes:—"From the time when the Addison fiasco was first mooted, I have openly expressed my conviction that no solution of the housing problem is possible which does not embrace: (1) the protection and extensive employment of unorganised, untutored and unfettered labour; (2) the suspension of legislation inimical to the natural development of building enterprise. Although this conviction seems to be shared by a great majority of those with whom I have discussed it, I understand that it is not held by some eminent architects whose views have undoubtedly influenced the abortive housing policies of three successive Governments. Insistent pursuit of this ideal is," states Mr. Ransome, "obstructing the building of houses in which men and women could live in comfort, health and decency," and he invites members of the profession who may share his views to communicate with him.

EXHIBITION NOTES

FINE ART SOCIETY.

QUITE head and shoulders in interest above the ordinary kind of exhibition is that of big game paintings and etchings by Mr. Kuhnert at the Fine Art Society. We do not suppose there is another living artist who, with the trained knowledge and experience of first-hand study, can make excellent pictures of big game in its natural haunts in the way these are presented. Though there is a quite dramatic quality in many of the pictures, we do not feel that the representation of real life and character is in any way sacrificed to theatrical effect, and in his telling landscape of "Cyclone Approaching" (17) we feel that the artist has envisaged the real spirit of the desolating storm which is approaching and causing the fright of the terrified skulking lions in the foreground. The little picture of "Roaring Lions at Night" (11) is an excellent piece of tone and colour, which is an additional quality to the fine portrayal of wild life. "Kaffir Buffaloes on the Steppe" (9), "Old Rogue Elephant" (5), "Approaching Thunderstorm" (50), and "Hippopotamus" (51), with the wonderful picture of giraffes (18), might be named as examples of the variety and skill of these paintings, which should be of intense interest and pleasure to all lovers of animal life. The etchings are no less a success than the paintings, and show in many cases a rare combination of virility and refinement.

WALKER GALLERY.

A small collection of etchings by May Shelly includes some successful and interesting work, such as the "King's Lodging, Caudebec-en-Caux" (7) and "The Cloister, Winchester College" (23). One would expect this etcher to be capable of very good work indeed if a certain hardness of effect were less apparent. In the subjects we have referred to this feeling is quite absent. A good show of water-colours by Mr. Romilly Fedden has just opened at Walker Galleries. Virile as much of the work is, we like the artist best in his more subdued subjects, such as Nos. 24, 46, 41, and 49. There is considerable charm of a decorative kind in these low-toned drawings. A good many subjects of architectural interest are included in the collection, one of which is a happy rendering of form and colour in the architectural values of St. Fiacre, Brittany (45).

Housing at Becontree.

The Housing Committee of the London County Council has recommended the Council to proceed with the erection of about one thousand additional houses on the Becontree Estate, to be known as Dagenham (No. 6) section. Another portion of the estate, it is suggested, should be developed. The cost of the two schemes is estimated to be £600,000 each.

COMPETITION NEWS

Coventry Wall Tablet.

Designs are invited for a wall tablet to be placed in the large hall of the King Henry VIII School, Coventry. Sending-in day, December 31. Full particulars from the Headmaster. (See advertisement this week.)

Leeds Library.

Designs are invited for a library to be erected at the Compton-road estate. Mr. Percy S. Worthington, F.R.I.B.A., is the assessor; and premiums of £35, £20 and £15 are offered respectively.

Argentina.

The Argentine Government offers prizes of 10,000, 6,000, 4,000, 3,000 and 2,000 Argentine gold pesos for the best architectural designs for a National Institute for the Blind. Further particulars are available in the Enquiry Room at the Department of Overseas Trade, 35, Old Queen-street, Westminster, S.W.1.

New Church and Hall.

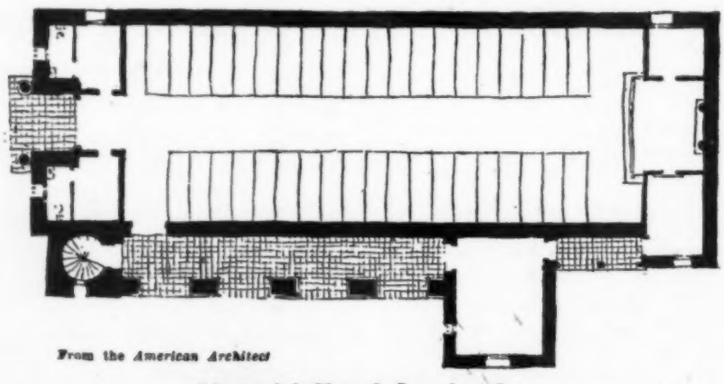
The assessor, Mr. Stanley Hall, F.R.I.B.A., has placed the design by Mr. W. M. Keesey, M.C., A.R.I.B.A., of the firm of Messrs. Kieffer, Fleming & Keesey, first in the competition for a new church and classrooms at Orange-street, Leicester-square. We illustrate the design this week.

Valletta Lay-out Competition.

Designs are invited for the lay-out of the open spaces and fortifications between Valletta and Floriana and those encircling Floriana. Applications for particulars, with a deposit of £5, to be made to the Minister of Public Works, Public Works Office, Valletta, Malta, not later than December 1. Premiums of £1,000 and £500 are offered to the first and second competitors respectively. An indemnity of £100 will be awarded to three other designs showing conspicuous merit. Sending-in day, June 30, 1925. Conditions can be seen at this office. The assessors in this competition are Mr. E. P. Warren, F.S.A., F.R.I.B.A., and Professor Patrick Abercrombie, M.A., A.R.I.B.A.

Other Competitions.

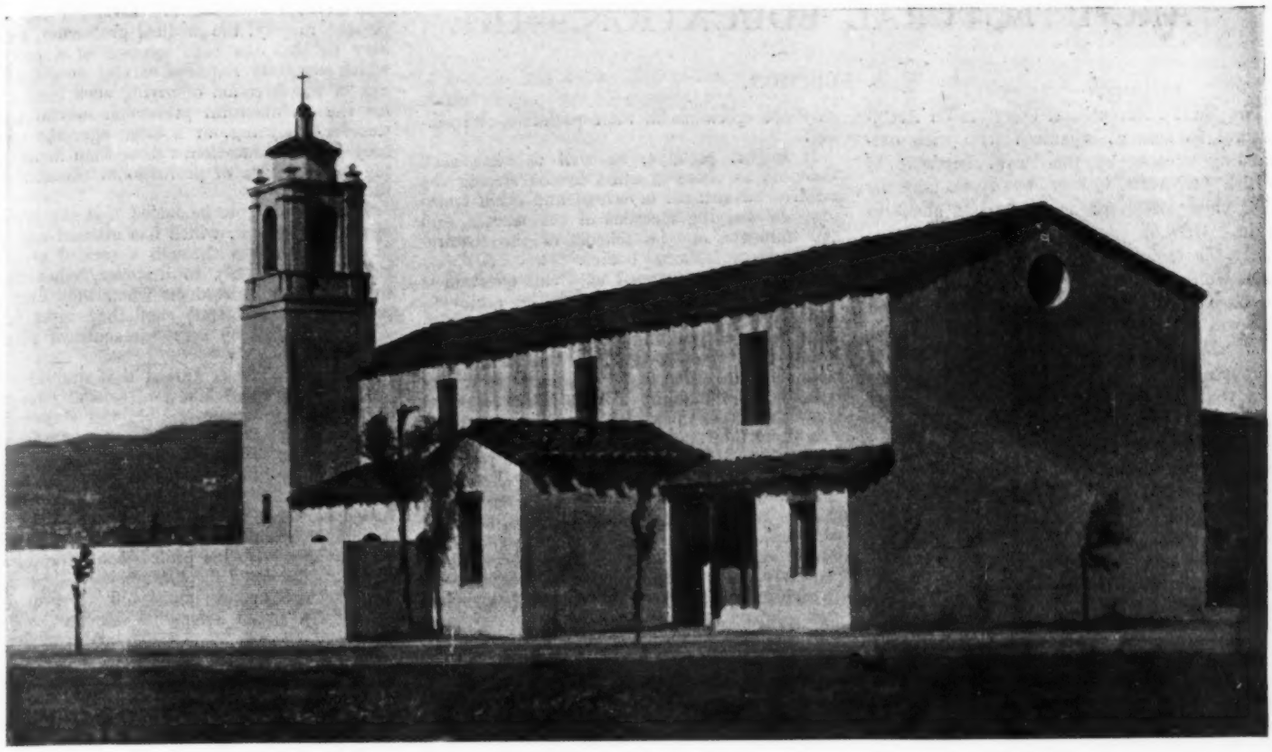
Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given):—Masonic Hall (May 1). Manchester Art Gallery (Feb. 28; Aug. 22). Essays on Ventilation (no sending-in day announced; Oct. 31). Offices at Nairobi (Feb. 28, 1925; Nov. 7). Barrow Hill Club—banned by R.I.B.A. (no sending-in date; Nov. 7). Jugo-Slav Landscape (Dec. 31; Nov. 7). Church at Southport (no sending-in date; Nov. 7). Southend School (no sending-in date; Nov. 14).

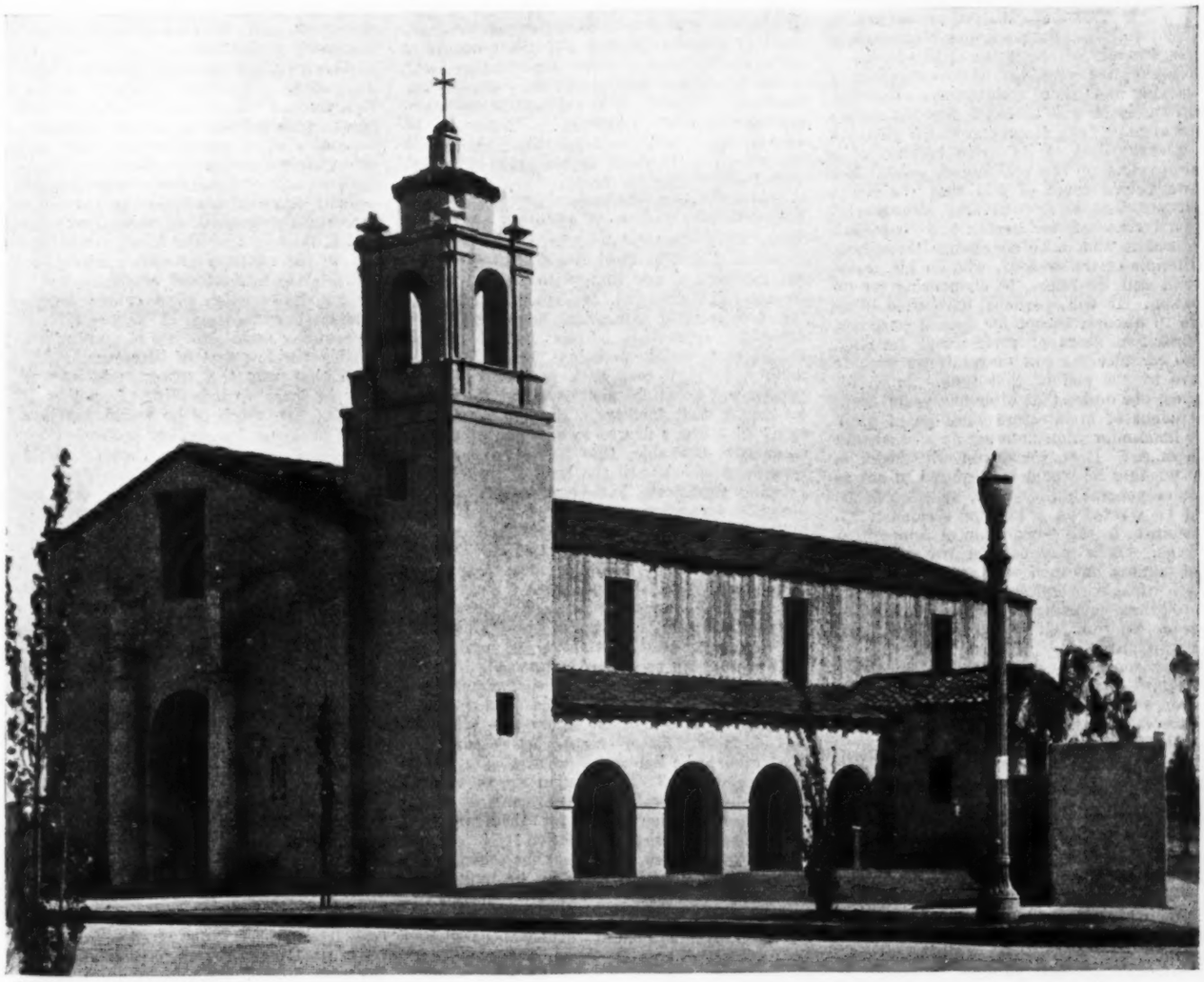


From the *American Architect*

Memorial Chapel, Los Angeles.

MR. ALFRED EICHLER, Architect; MR. H. W. BISHOP, Supervising Architect.





From *The American Architect.*

[Memorial Chapel, Los Angeles. MR. ALFRED EICHLER, Architect; MR. H. W. BISHOP, Supervising Architect.

ARCHITECTURAL EDUCATION.—I

By W. S. PURCHON.

THE First International Congress on Architectural Education, organised with such outstanding success by the Royal Institute of British Architects, is over, but if we take the right view its work is surely just about to begin. One of its greatest achievements is surely the fact that it has imbued us with a spirit which will not let us rest satisfied until we have completed our investigations, found the weak points in our methods, and set about the task of putting our schemes into thorough order. If we are prepared to consider that the Congress started a great work which we shall be proud to complete by patient effort, then indeed will its success be demonstrated to the full.

The investigation of schemes of architectural education is no easy task, not even for the youngest of us, requiring as it does such breadth of judgment, such philosophic detachment. Most of us tend to approach the problem with the methods of one school, or of one system of education, uppermost in our minds, and in judging the work or the schemes of others we may miss the finer points of their efforts entirely; that which we praise may, indeed, be just what those responsible would condemn.

In the notes which follow, the attempt has been made not so much to indicate a single solution to the problem, but rather to put forward points for and against a variety of methods, and to indicate various tendencies in diverse schemes of architectural education.

In attempting any sort of investigation of the varying methods of architectural education, it will surely be wise to decide first the nature of our aims. Much discussion in the past has lost a great deal of its value because of a failure to clear up this preliminary point. Nor are we helped much if told that the object of all professional architectural education is the production of architects, and that such an education should be continuous throughout the lifetime of the student, who on his deathbed will still, doubtless, be clamouring for information. It will, perhaps, save time if we decide to discuss, except for special purposes, the first five years of professional training, and to consider the sort of result we wish to achieve by the end of that time. Is it, for instance, our desire that after five years' work the student of architecture shall be of absolutely maximum immediate use as an assistant in an office? If so we should still desire to know whether he would be required to act as a sort of general utility man, or whether he would be wanted as a kind of specialist, as, for instance, in the preparation of competition drawings. Or it may be that we are thinking of turning out men who are as nearly as possible capable of running a small practice, and to that immediate end we might be prepared to sink all other considerations. Again, it may be necessary for us to cater for more than one type of student. Opportunities for specialisation are given in one at least of our schools, and it may possibly be that still further options should be available.

On the other hand we might, to use Browning's language, decline to "draw a circle premature, heedless of far gain," and decide on the attempt to produce men with a wider and richer general and professional culture, who would doubtless be less well fitted for immediate architectural responsibilities but who would be more able, after obtaining further practical experience, to hold their own among cultured men not only of their own but also of other professions, and to stand out, if necessary, against passing changes in architectural fashions. Such men would probably not specialise in their professional training.

It might, perhaps, be well to have such thoughts as these in mind in considering the relative advantages of school and office training, the varying methods of the schools, and the influence on the schools of the requirements of professional bodies.

Very closely connected with this question is that of general education for the architect. Years ago the Royal Institute of British Architects had a preliminary examination, and wisely they abandoned it, so that at the present time, in order to be registered as a probationer, the budding British architect must show that he has passed a recognised examination in certain subjects, or produce other evidence to prove that he has reached the required standard of general education. Entrance examinations conducted by the recognised schools are approved for this purpose, the subjects required being English, another modern language, mathematics (arithmetic, algebra, geometry), mechanics or physics, or chemistry or higher mathematics, history and geography, and elementary drawing.

The standard of examination accepted probably fluctuates slightly, but it may possibly be stabilised gradually at or about matriculation level. It is, of course, wise to have a generous number of optional subjects in such an examination, as the main thing to ensure is a reasonable level of general education, and the subjects taken in different secondary schools vary considerably. The main difficulties to be tackled will centre round the standard of the examination and the question of elementary drawing. On the former point there are those who would like to see our students obtaining an arts degree before starting professional education. There is, of course, much to be said for this. The objections are that it places architectural education at a disadvantage in comparison with that required for other professions, such as the medical, that very few could afford to give three years after matriculation to obtain an arts degree and then proceed to a five years' course in architecture, and that, with an arts course as normally arranged, the student leaving it for architectural education might be better fitted to appreciate certain aspects of the latter, but would probably have lost any facility he may ever have possessed with a pencil, and he might also have lost the power to acquire that facility. Similar arguments apply in a lesser degree to a course otherwise eminently desirable, that of staying at a secondary school until the level of the Higher Leaving Certificate has been reached. This normally means two years at school after matriculation. It brings the student to the level of the University Intermediate Examination, and there would be much to be said for it could it be combined with a reasonable training in the necessary elementary drawing.

From the point of view of the training of the architect, an investigation is needed of the art teaching in the secondary schools, and this is really one of the first things to be done. Most people would agree that students starting on a course of architecture need a certain facility in freehand and possibly in what used to be known as practical plane and solid geometry. To what extent are these and similar matters really essential, and to what extent is provision made for them in the normal pre-professional education?

It will, of course, be urged that schemes of architectural education must not be limited in scope to those students who have been able to obtain a sound preliminary education; that provision must be made to enable those whose early education was neglected, but who may, nevertheless, become worthy, or even great, architects, if given the opportunity. No special courses of instruction are arranged for such persons in, say, the medical profession, and it may be that the best solution of a problem which certainly requires careful consideration lies in the direction of giving such candidates for the architectural profession special facilities for obtaining, at a later age, the necessary general education, rather than in modifying our schemes of professional education for their benefit.

It is certainly to be hoped that the system, or lack of system, which has allowed numbers of youths to pass through a sort of architectural training only to discover, what ought to have been insisted on when they first approached an architect, that they must begin again and pick up some elements of general education.

If, however, it is agreed that normally the student will begin his professional education after reaching approximately the standard of matriculation, and that in some way adequate opportunities will be given him to acquire some little facility in elementary drawing before reaching that stage, the question may well be raised as to the necessity or otherwise for him to continue some form of general education side by side with his professional training.

In the old days the Universities apparently felt that architecture alone did not provide a sufficiently broad education to warrant the award of degrees, a decision arrived at possibly in the main because arts degrees were the ones normally sought. As a result students in architecture had to pursue practically the whole of a normal arts course for their first year, and in some cases this arrangement still obtains. The disadvantage of this method is the large amount of time taken from the student's professional work in the first year, and the alternative of substituting the study of one ordinary arts subject in each of the first two years of the course has been suggested. Elsewhere, however, it has been felt that a well-devised scheme of architectural training following matriculation gives an education of adequate breadth, but this point is certainly still open to discussion.

Opponents of the older scheme feel that the normal arts subjects by no means necessarily increase the breadth of a student's outlook, and it may be that the solution will be found not in the addition of such subjects to those essential to professional efficiency, but rather by the introduction of a course designed to interest the students of architecture in the present-day manifestations of another art, preferably perhaps that of literature.

In that way the young architect will not only be learning something of another art, as a living art, much as he would doubtless like those studying for another profession to learn something of architecture, but he would also be put in the way of learning something of the changes which are coming over modern life, something of the great movements of our own times, something of the thoughts of our greatest minds. And these are matters which influence our architecture, indirectly perhaps, and without knowledge of them the young architect is to some extent at least living in a backwater away from the main tide of human progress.

While dealing with this matter of general education reference should also be made to the necessity, or otherwise, of the further study during the professional course of such subjects as higher mathematics and non-architectural history with special reference to social and economic conditions in the past and present. It must, however, be clearly borne in mind that the addition of subjects of general culture type or of a pure science nature, while possibly eminently desirable, will inevitably result in the lowering of the technical standard reached by the student in, say, the first three years of his course. The consideration of this point is, perhaps, the most important work immediately awaiting the attention of the experts in architectural education.

CORRESPONDENCE

Manchester New Art Gallery Competition.]

SIR,—I have noted with interest the paragraph in the editorial notes of your number of November 14 with reference to the above competition, in which mention is made of the "useless system of rendering" architectural drawings.

I cannot help feeling that the object of rendering drawings is not understood by those who write in this strain. The object of rendering, I presume, is primarily to explain the modelling of the building, and it certainly enables an assessor to judge much more accurately of the merits of the design in proportion and massing than do pure line drawings in which insignificant details "count" as heavily as do the lines of main elements. We are all familiar with the heavy competition style of line drawings in which the glazing bars form the most interestlng pattern in the scheme, and the whole is pulled together by a thick black line several millimetres thick.

Great architects of the past have used shadowed drawings almost entirely, and I do not suppose that Sir William Chambers considered the rendering of his drawings of Somerset House was a useless proceeding.

As regards this competition, one feels sympathy with competitors who are called upon to supply $\frac{1}{2}$ in. details and $\frac{1}{8}$ in. scale elevations. If half-inches are required surely sixteenth scale elevations would be all that is necessary, and if eighth scales are insisted upon the half-inches might be omitted.

HOWARD ROBERSON.

Professor Moira on Architects.

SIR,—Professor Moira's charming and suggestive lecture on "The Building, the Architect and the Craftsman," at the opening meeting of the Edinburgh Architectural Association, held recently, dealt in a frank and friendly way with the difficulties (under present day systems) of a successful co-operation between the architect, artist and craftsman. His long and honourable record of association with some of our most eminent architects gives him the right to express his opinions and gives any such opinions great weight. His audience, generally, expressed agreement as to the soundness and practicality of his views, but I would suggest that his proposal to adopt certain Swedish and Dutch methods in the education of the architectural student should be very carefully considered before being adopted.

Britain has ever been recognised as sane in its outlook in all matters relating to the arts, and a system which produced such men as Shaw and Bentley (to mention only two who studied extensively on the Continent) should only be superseded after the most careful investigation. Prof. Moira stated that architects did not understand the meaning of tradition as painters understood it, and inferred that most architects were too archæological and antiquarian in their outlook.

History has proved that not only is individual taste but national taste largely developed by the study of the great works of the past, and to suggest that students would acquire a profound knowledge of composition by playing a game of chess with the spacing of two windows and a door in a blank wall seems more than doubtful. The game would soon become standardised. The real solution of the problem seems rather to be for teachers to insist that old examples should not be merely copied but dissected and analysed to determine the structural and organic motives underlying their beauty and perfection. Men with no creative faculty are better inspired by fine old work than blundering into original monstrosities. Great art is great for all time, and can never be out of fashion. As Prof. Moira said, "Mind is what counts, not merely technique, and mind is eternal." We have several notable instances of the work of a revival surpassing in quality the work that inspired it. For instance, the eleventh-century Byzantine mosaics of the prophets in the aisles of St. Mark's, Venice, are, decoratively, finer than the original Byzantine mosaics at Ravenna. If the sculptor and painter took as much intelligent interest in architecture as the architect takes in sculpture and painting we should soon arrive at a greater harmony in the three arts.

Ghiberti, Brunelleschi, Michelangelo and the great men of the Renaissance all spent years studying the masterpieces of the past, and this system has produced the best men of our own time. In decorative work Prof. Moira's own work has something of the largeness of the Venetians with the technique of Velasquez. If decorative artists would follow the architects' lead in this study of old work and analyse the composition, scale, and technique of such men as Botticelli, Perugino, Pinturicchio, Benozzi Gozzoli, Mantegna, Pietro della Francesco, Tintoretto, Titian, Veronese, Leonardo, Puvis de Chavannes, Alfred Stevens and the other masters of the past, and sculptors study Nicolla Pisano, Donatello, Ghiberti, Verocchio, Michelangelo, Della Robbia, and the other masters in the plastic art, as studies in composition, line and scale, the dawn of a new Renaissance would soon appear. Many of our academicians have never seen an antique or an old master outside a museum. To understand such work it must be seen in its relation to architecture.

Architecture is certainly ahead of the sister arts to-day, and is slowly but surely coming into its own. Prof. Moira's great record of achievement makes him a worthy leader, and it is to be hoped that Scotland and Scottish architects in particular will realise the great importance of his appointment as official head of art education in the Northern capital. Scotland has a few decorative artists who understand the principles of design in this department of art, but Puritanism is not yet dead, and the Scots are a parsimonious people in the matter of art, so these men have never had a chance.

WILLIAM DAVIDSON.

Edinburgh.

MEETINGS

MONDAY, *November* 24.

Architectural Association.—Mr. E. J. T. Lutyens on the "A.A. Excursion to Spain." At 34, Bedford-square, W.C.1. 7 p.m.

TUESDAY, *November* 25.

Liverpool Architectural Society.—Mr. C. A. R. Swan on "Relation of the Liverpool Corporation Act of 1921 to Architects." At 13, Harrington-street.

College of Estate Management.—Mr. W. T. Creswell on "Building Contracts." At 35, Lincoln's Inn Fields, W.C.2. 5.30 p.m.

THURSDAY, *November* 27.

Society of Antiquaries.—Ordinary meeting. At Burlington House, W.1. 8.30 p.m.

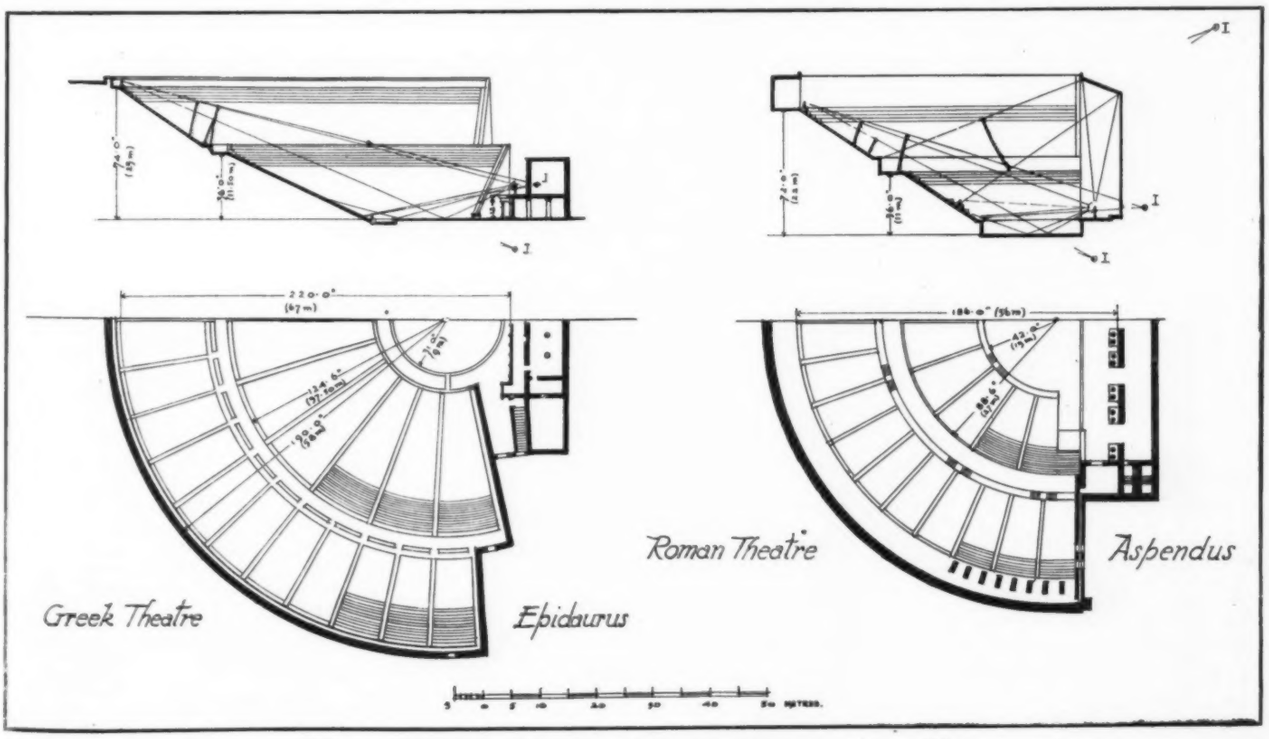


Fig. 1.—Acoustics of Greek and Roman Theatres. (*See p.* 812.)

MR. J. ALFRED GOTCH (President) occupied the chair at a general meeting of the Royal Institute of British Architects, at No. 9, Conduit-street, W.1, on Monday evening.

Obituary.

After the minutes of the previous meeting had been confirmed, MR. ARTHUR KEEN (Honorary Secretary) announced the death of the following members:—E. Seward (Retired Fellow); W. Pywell (Fellow); W. E. Barry, F. A. Brewerton, J. W. Cockrill, F. E. L. Harris, R. B. Mather, T. J. Peters, A. S. Philp, E. H. Rowse (Associates); F. R. Bates, S. R. Bryce, H. Dyball, J. W. Lockhart, W. D. T. Munford, J. Perrault, W. Shaw, C. H. Slatter (Licentiates).

PLANNING FOR GOOD ACOUSTICS.

MR. HOPE BAGENAL then read a paper entitled "Planning for Good Acoustics."

In the course of his paper, he said the classic theatre had many vital lessons in acoustic planning. The Greek type was a very highly developed acoustic instrument, the Roman was less excellent. The excellence of the Greek theatre was due to three contributing factors:—

(1) The sound was intensified near the source by a number of useful reflections.

(2) The passage from speaker to listener was kept clear and free from obstacles.

(3) The sound had a clear passage to the listener and reached him at a wide angle.

In Fig. 1 the Greek and the Roman theatres were compared. The characteristics of the Greek were the high, narrow *logeion* or stage platform (conceded to be 10 or 12 ft. high at Epidaurus and Priene); the skene wall behind this; and the large paved orchestra in front of it. The useful reflections from these surfaces were shown on the Greek section (Fig. 1). The small depth of the stage and, therefore, the nearness of the players to their back wall, ensured its efficiency as a reflector. The height of the stage above the orchestra level gave reflections at a useful angle from the paved area below. There was also the floor of the stage giving a less useful reflector.

The height of the stage also gave a wide angle of impact to the direct sound from player to audience. That was specially important when there were no reflections from the ceiling. Sound passing over human heads at a small angle was rapidly absorbed. Therefore, the wider the angle of impact the better. The plan of the classic theatre ensured an equal distribution of sound in all directions, and the section in the case of the Greek theatre was usually without reflecting surfaces likely to cause even local interference. Also, since there was no roof to the Greek theatre the reverberation was nearly as short as in the open air. But the fact that there was no reverberation meant that the energy condition was low. The size of the classic theatres was enormous, seating as many as sixteen to twenty thousand people. The rear seats were sometimes at a distance of more than 200 ft. from the stage. All possible reinforcements were therefore desirable. A method of reinforcing by resonance was probably secured by the following means. The wood floor of the stage in contact with the feet of the player acted as a resonating surface. In addition to the stage floor were the *pinakes* or wooden panels placed between stone columns in the supporting wall of the stage. Each wooden panel in this position would undoubtedly reinforce the sound if in contact with the wooden floor upon which the players stood. The declamation of the players was a kind of rhythmical shouting or chanting, and probably required considerable training. The frequent and sonorous vowel sounds of the Greek tongue, produced as musical tones, conveyed the sense to the remotest seats. Stage floor and *pinakes* together formed the sound-box. The players performed not only upon the *logeion* or stage platform, but upon the *theologeion* above and upon the orchestra below.

These points in acoustic design had a direct bearing upon modern problems. A hard rear wall some 10 ft. behind the speaker might make considerable difference to audibility in the case of a large hall or in the case of a pulpit. The usefulness of the stage floor as a reflector was one of the factors which made the difference between the opera house and the concert room. A concert room would be improved by a clear hard floor space round the singer or solo instrument. It was bad design to bring orchestral instruments or platform seats close up to solo performers. A clear orchestra area immediately in front of the Albert Hall platform would increase the useful sound to galleries.

Wood surfaces could also be used advantageously as resonators. They should be in contact with the singer or instrument. The wood surface of the platform floor should be jointed to the front of the platform, which would then act like the Greek *pinakes;* and the same principle could be applied to the wood panelling of the platform recess. A powerful singer was really an instrument in contact with the floor. Resonating surfaces increased his power: and they were specially useful for musical instruments like 'cellos and double basses.

In the Roman theatre the stage was lower and was brought forward so that the orchestra became a semi-circle. The great width of the classic stage of this shape must have constituted a danger. Echoes would certainly be returned from wing walls. In these walls the *periakti* might have been placed—a series of prisms, triangular on plan, rotating upon an axis and providing three sets of scenery. If the line of these *periakti* was placed at an angle of 45 deg. to the stage, the actor's voice would be reflected out into the hemicycle. In the Roman theatre the orchestra space was frequently used for seats. The reflecting surface thus sacrificed was partly compensated for by the extra floor area of the stage. But an important addition occurs in the Roman theatre from an acoustic point of view, namely, the roof set at an angle above the stage, yet the reflections from this roof would not have given "the consonance" recommended by Vitruvius. The lesson of the classic theatre was: that reflecting plus resonating surfaces *near the source of sound* will work wonders.

After treating on the acoustics of churches, the lecturer dealt with the English Legislative Chamber. The House of Commons, he said, had in course of time produced its own style of utterance, and it illustrated better than any other one important aspect of acoustic design. Its basic principle was debate: and debate had requirements very different from the requirements of stage plays or intoned liturgy. The nature of that kind of oratory was bound up with the building in which it took place. It was necessarily a small building—a college chapel in character. Apparently it was not until the year 1800 that plans for a new chamber were called for by a Select Committee in 1831. But after the fire of 1834 all these schemes were forgotten. The old Painted Chamber was fitted up for the Lords and the old Court of Requests prepared for the Commons. This Chamber in the old Court of Requests was larger than the Chamber in the St. Stephen's Chapel. It was 80 ft. by 38 ft., and in the engraved view given by Brayley and Britton in 1836 it looked some 40 ft. in height. This would have meant a longer reverberation, and acoustic complaints must have occurred, for alterations were undertaken. A view of the interior of the House of Commons published in 1841 showed what appeared to be the same room lined with wood and with a low ceiling of a special shape. That was known as "the temporary House," and became famous for its good acoustic qualities. The lowness of the ceiling was apparently due to the ideas of Dr. Reid, the ventilation expert, in whose opinion "the cubic content to be filled by the voice should be as small as was consistent with the necessary accommodation. For that reason he had the ceiling of the temporary House made very low, so that there should be not much space filled."

Since St. Stephen's Chapel had a chamber beneath it, it was apparently necessary also that all succeeding Houses should have the same. The chamber beneath the temporary House was made to communicate with the chamber above by means of holes drilled in the wooden floor. The acoustic excellence of this room, thus transformed, undoubtedly caused the adverse criticism that occurred when the Parliament assembled in 1848 in Sir Charles Barry's new House. The conclusions of members were quite right. What was at stake was that facility for rapid debate which could not exist with a long reverberation. Reverberation (other factors being equal) varied directly with volume, and volume with height of ceiling. In 1850 a new ceiling similar in shape to Smirke's (though the effect of the shape was probably not understood) was inserted and the result was a great improvement. Barry's House of Lords maintained its original ceiling. Tradition said that the House of Commons, before the new ceiling was inserted, was worse than the House of Lords. After the alteration to the Commons all were agreed and were still agreed that the Commons was good, whereas the Lords was bad.

In the Commons the old habit of rapid debate at conversational pitch was rendered easy by the new ceiling. Complaints, however, arose and still arise from members in the back benches for the following reasons. The English legislative chamber was not only an auditory but also a machine of business. Its excellence in this respect was found on analysis (Select Committee House of Commons Arrangements, 1868) to consist in the fact that Ministers in charge of Bills were near the Speaker (or the chairman of committee), and near the Press gallery. A great deal of the business of the House was done in a voice of conversational pitch across the table, and Ministers addressing the chair could be well heard by the Press gallery immediately above the chair. The importance of the Press was obvious. But in addressing the chair from the front benches, a speaker had a large part of his audience behind his back. In the English system the Speaker was the only permanent audience, and any member's seat might become a source of sound—unlike the Continental system, where every speaker must come to a tribune. Hence the periodical demands in modern history to have the table, and the Ministers with it, moved down the floor to a more central position. By this means also the Treasury and Front Opposition benches could be increased from the now inadequate sixteen seats to twenty-two or twenty-four. The effect of the splayed ceiling was to concentrate sound on front benches, and since the important business of the House was carried on there this was an advantage; but it did not help members in the back benches. The reflected beams of sound from the splayed portions of the ceiling were shown in Fig 2 concentrating on the front benches and missing the back seats and the galleries. The beam from the centre level portion covered only the seats in front of a speaker. Seats behind front bench speakers were, therefore, ill-provided. This ceiling was constructed of wood and glass, and was, therefore, not as efficient a reflector as if it were of hard plaster. If this were the case, and if the slopes of the ceiling were adjusted, the room could be made nearly perfect. The total volume of the room

was only 127,000 cu. ft., which was very considerably less than the French Chamber of Deputies, 277,000 cu. ft., and the Washington House of Representatives, 409,000 cu. ft.

E. M. Barry, son of Sir Charles, designed a new House of Commons at the request of the Select Committee of 1868. The evidence of that Committee was not lost upon him. He preserved the shape of the ceiling and actually lowered its height. The action of the splay in E. M. Barry's design was more valuable than in the existing House. It provided useful beams of sound from front benches to seats in their rear (see Fig. 2). If at any time the House of Commons were to be rebuilt, this excellent design should be carefully studied.

In the designing of modern parliament chambers, the problem was to provide a plan semi-circular or semi-octagonal in shape to meet modern states of opinion, and yet still able to dispense with a tribune position for the speaker. The advantage of a tribune was twofold: First, a speaker had all his audience in front of him, and, therefore, useful reflecting surfaces could be designed to his right and left; and secondly, a single direction was given to his voice, to which he became accustomed. the large Continental parliament houses, all of great height, were indeed acoustically workable mainly because a central tribune position was used. Since without a tribune front bench speakers had a large number of listeners at their back, the ceiling should always be used as a reflector normal to every seat in the house; that was to say, flat, and not more than 35 ft. in height. A semi-circular or semi-octagonal plan could be made to supply also reflecting surfaces along the diameter behind the chairman. The requirements of the Press should also receive special attention.

Above all, it was necessary to design for the reverberation. As a rule in a legislative chamber the number of persons present was always relatively small in proportion to the air volume of the building. That meant that large areas of permanent absorbing material must be provided in suitable positions in order to compensate for this lack and reduce the reverberation to a figure suitable to the speaking voice.

The requirements for a good absorbing material were: 1. Cleanliness. 2. Durability. The absorbents available for architects at present fell into two classes: first, soft materials requiring a canvas screen; and second, plaster and tiles. Although he yielded to none in his admiration of the American results, direct experiments upon English materials and fittings were most important. The results of the Building Research Board experiments upon British materials fixed exactly as an architect would have them fixed, had already been most valuable. These experiments were undertaken at the request of the Indian Government, at the suggestion of Mr. Herbert Baker, on account of the work at Delhi. The experiments were carried out by Mr. P. W. Barnett, A.R.I.B.A., assisted by Mr. W. H. Glanville, B.Sc., and other members of the staff of the Building Research Station under the direction at first of Mr. H. O. Weller, and now of Dr. R. E. Stradling, M.C., Ph.D. The tests were made to cover the musical scale at octave intervals. Some of the many results obtained could be stated briefly as followed:—

The most powerful absorbent of all (for pitch C4) which an architect could use was slag wool behind wire netting. The efficiency of this absorbent declined rapidly above C5—that was, for higher notes.

The next most efficient absorbent for C4 was Cabot quilt. This material was easy to apply and was hygienic and not harmful to the touch like slag wool. It was slightly resonant. It improved the speaking voice conditions, but would not give the best results for chamber music owing to unequal reinforcing of tones. It was fixed in two layers on 2 in. by 1½ in. battens, 2 ft. 8 in. apart, and had thus a 1½ in. air space behind it.

The next most efficient absorbent was 1 in. hair felt. Felt was found at Harlesden to make, in conjunction with wood, the best conditions for chamber music. But if felt were to be widely used in England it must be made really moth-proof and fire-proof. The felt was also fixed on 2 in. by 1½ in. battens. All these three materials required canvas screening. Of the wall panellings, cork 1 in. thick framed in wood with an air space behind gave fairly high absorption for C4. "Celotex" board was found to be an efficient absorbent and to give excellent results for chamber music. Of the permanent flooring materials rubber carpet 3-16 in. thick was found to be the most efficient.

Owing to the courtesy of Professor Paul Sabine of the Geneva Laboratory, Illinois, experiments were undertaken upon an acoustic plaster using his recipe as a basis. These experiments produced interesting and useful results, and were still in progress. An acoustic plaster was developed causing for C4 at least 20 per cent. reduction in the reverberation of the room. (This figure must not be taken to represent a Sabine co-efficient.) A surprising result of the experiments in this class was the efficiency of coke breeze blocks 2 in. thick. It was shown by the experiments that coke breeze slabs having a finishing coat of acoustic plaster made a very efficient absorber.

The Director of Building Research, Department of Scientific and Industrial Research (Dr. R. E. STRADLING), in proposing a vote of thanks to the lecturer, said the Building Research Board owed a great deal to the work of Mr. Bagenal, to whose keenness was due the starting of the investigations of the Board. The work of the National Physical Laboratory and of the Harlesden Laboratory also had a certain bearing on the architectural acoustic problem. The Department of Scientific and Industrial Research had called together a committee of those interested in acoustics to take charge and direct the work on that specific subject, and had been very much encouraged by the visits of the Science Standing Committee of the R.I.B.A.

In seconding the vote of thanks, DR. ALEX. WOOD said Mr. Bagenal had contributed more to the development of the study of acoustics than anyone else in this country.

MR. G. A. SUTHERLAND said the architect must conform to the laws of acoustics in designing a building, and not expect to design a hall which a physicist could make acoustically correct. He suggested that assessors in architectural competitions might lay down some simple acoustic properties which a building should possess, and not accept a design with hopeless acoustic properties, and then try to improve them.

DR. G. W. C. KAYE said the National Physical Laboratory had taken up the question of acoustics, and it was their intention, with the support of the R.I.B.A., to throw themselves with the utmost vigour into the work.

MR. MAURICE WEBB said in the case of large buildings he believed amplifiers had eliminated half the acoustic difficulties; at Liverpool Cathedral there were amplifiers in the ceilings which easily got over acoustic troubles.

MR. RAYMOND UNWIN said amplifiers were used in the Council Chamber of the League of Nations, and it was almost impossible to discern in the gallery whether the sound came from the speaker or the amplifier.

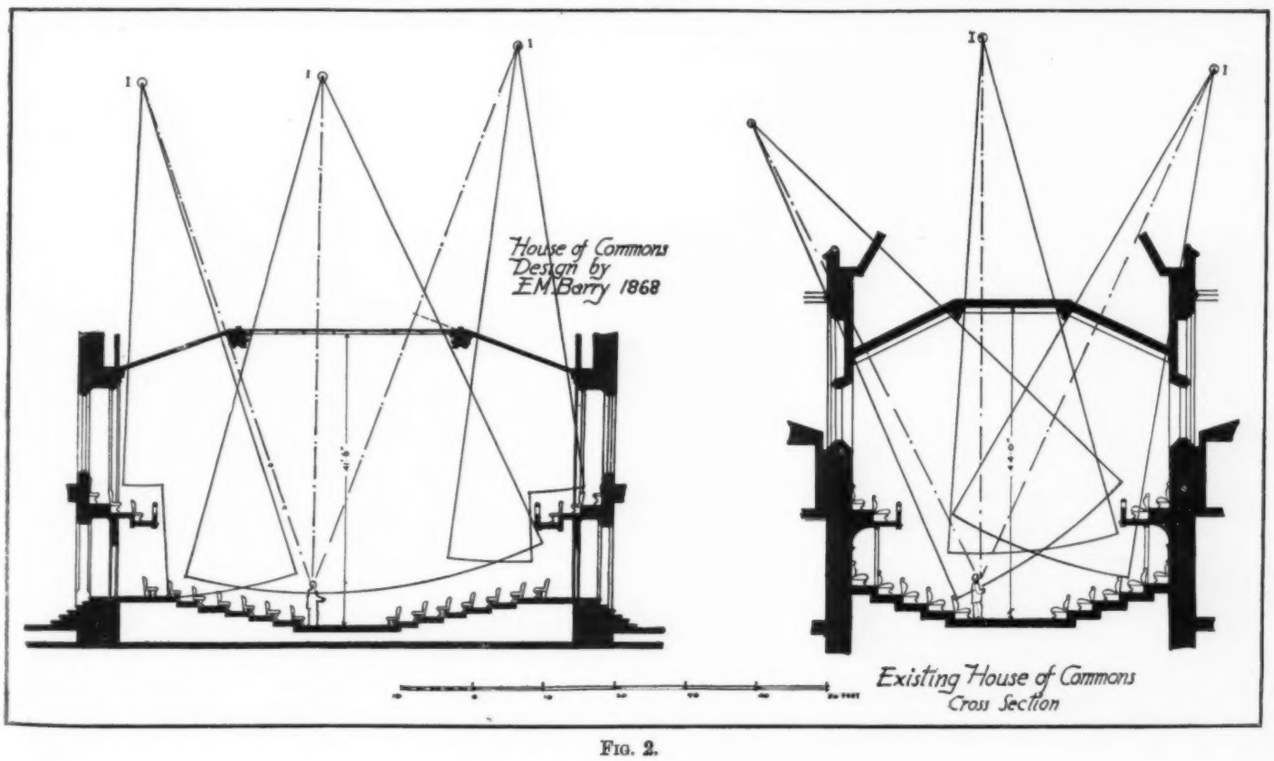


FIG. 2.

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ILLUSTRATIONS

Entrance Hall to St. James' Park Station.

A description of the entrance hall to offices recently built at St. James' Park Metropolitan District Railway Station, is given on p. 825. Messrs. Richardson & Gill, FF.R.I.B.A., are the architects.

New Science Building, Mill Hill School, N.W.

This drawing shows the building recently opened by H.R.H. the Prince of Wales to house the Science Departments of Mill Hill School. Laboratories are provided for the various branches of science, with workshops for handicrafts, and special provision has been made for experimental work in wireless telegraphy. The structure generally is of brick with hollow block floors, the walls externally being finished in stucco to match the Monks Park stone used in the main entrance. The roof is covered with dark brown tiles. The general contractors for the work were Messrs. Miskin & Son, of St. Albans and London, and the following sub-contractors were also employed: Messrs. Rudd & Co., plaster work; Richardson & Co., iron balconies; Jas. Gray, Ltd., heating; Hendon Electric Supply Co., electric light; Haywards, Ltd., roof lights; Halstead Bros., laboratory fittings. The enrichments to the main entrance door were modelled and carved by Mr. P. G. Bentham, of Stamford Bridge Studios. The bell tower shown in the drawing has not yet been erected, but it is hoped to carry out this work as a memorial at some future date.

The building was designed and carried out under the supervisicn of Mr. Stanley Hamp (Collcutt & Hamp), 126, Wigmore-street, W.1; the perspective drawing is by Mr. Kenneth Anns.

Houses on Barker Estate.

These houses, the first of a series of groups of different designs, have been completed on some of the front sites adjoining Upper Richmond-road. The whole of this estate is to accommodate over three hundred houses of this type. The brickwork is generally in grey Sussex stocks, with dark sand-faced tiling for the roofs, whilst the windows are in metal casements and leaded lights in stout frames. The builder was Mr. Oliver Kennard, of Cecil House, Westwood-road, Sydenham. The second group, consisting of twenty houses, is now in course of erection at another part of the estate, and the third group under preparation for procedure. Mr. Sydney E. Castle, M.S.A., of 40, Albemarle-street, Piccadilly, W.1, is the architect to the estate.

Competition for a Church and Hall, Leicester-square.

We also illustrate this week the design, placed first, by Mr. W. M. Keesey, A.R.I.B.A., of Messrs. Kieffer, Fleming & Keesey, for a new church, hall, &c., in Orange-street, Leicester-square. The front elevation, Orange-street, has been slightly enlarged from the original scale in order to give a better view of the detail.

ARCHITECTS' FEES UNDER HOUSING SCHEMES

ARCHITECTS are having a good deal of trouble in ascertaining the fees they are entitled to under Housing Schemes. Only last week we published the report of a case where the point was raised under Memorandum No. 4 whether, when more than one architect was engaged on schemes by the same authority the several schemes were to be pooled for the purposes of calculating the remuneration, and a further case, Elkington *v.* Wandsworth Borough Council (the same Council as in the case referred to) is reported in *The Times*, November 13 and 14. As in Mr. Pigott's case (that reported last week), it seems to have been agreed after the first contract that the remuneration was to be governed by Memorandum No. 4 under which the remuneration is to be 5 per cent. on the first 12 cottages, 2½ per cent. on the next 60, and 1¼ per cent. on the remainder, and the Memorandum suggests that as a rule one architect should not be entrusted with more than 250 houses.

In this case, Mr. Elkington had been engaged to undertake a scheme involving 400 houses, of which 153 had been completed and 247 had been abandoned. He had been paid certain sums, but was suing for a balance of £3,215 10s. Two contentions appear to have been raised in the case; (1) the plaintiff had claimed the 5 per cent. on those houses for which contracts had been first signed in point of time and these houses happened to be the most expensive; (2) he contended that as regards the abandoned houses, although the Memorandum provided no scale for these, yet it incorporated the memorandum of the Royal Institute of British Architects which construed with Memorandum No. 4 gives the scale, and therefore the remuneration which the plaintiff was entitled to was a question of contract and not a *quantum meruit*, and he claimed two-thirds of what he would have been entitled to had the work been completed.

The contention for the defendants was that under Memorandum No. 4 the proper method of calculating the remuneration was to take the whole number of houses built and base the several percentages on them. Thus in this case the average cost was £737, and it was contended that this figure multiplied by 12 would give the 5 per cent. basis, and multiplied by 60 the 2½ per cent. and so on.

The Court held that the defendants' contention was right on this point. On the second point the Court held that the memorandum of the Royal Institute of British Architects was not incorporated in Memorandum No. 4 in the ordinary sense of that term and the true interpretation of Memorandum No. 4 was that the memorandum of the Royal Institute might be looked at to ascertain what the conditions of engagement were, but the scale must be that laid down in No. 4, and as in that memorandum there was no scale for abandoned work the plaintiff was entitled to payment on a *quantum meruit*, and if the parties were unable to agree to the figures the matter would be sent to an official referee.

It seems very unfortunate that the memorandum should have been so obscurely worded as to leave parties in doubt as to their rights and liabilities thereunder, and even the judgment as reported on the second point does not seem to make the construction of the two documents very clear to the lay mind, but it appears the point cannot arise in subsequent cases as a memorandum dealing with claims for abandoned schemes has since been issued. This is not before us, but we hope it deals with this very important point in clear terms on a scale, for nothing can be less satisfactory than having to determine the amount of remuneration on the principle of a *quantum meruit*. It is distasteful to both parties to be forced to litigate questions which should be clearly dealt with in the documents regulating such engagements.

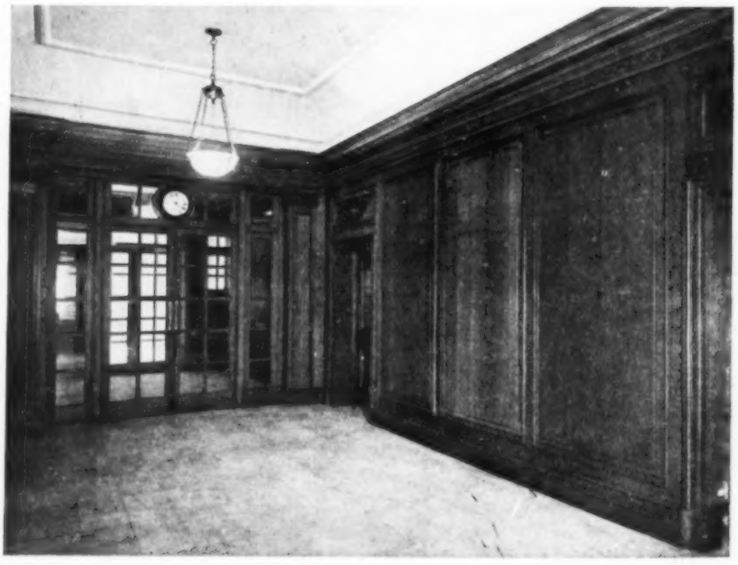
The above is only a very short summary of the arguments and the judgment delivered in this case.

Corrections.

The correct description of this building is the Eastman Theatre and School of Music, and not as given in our issue of last week.

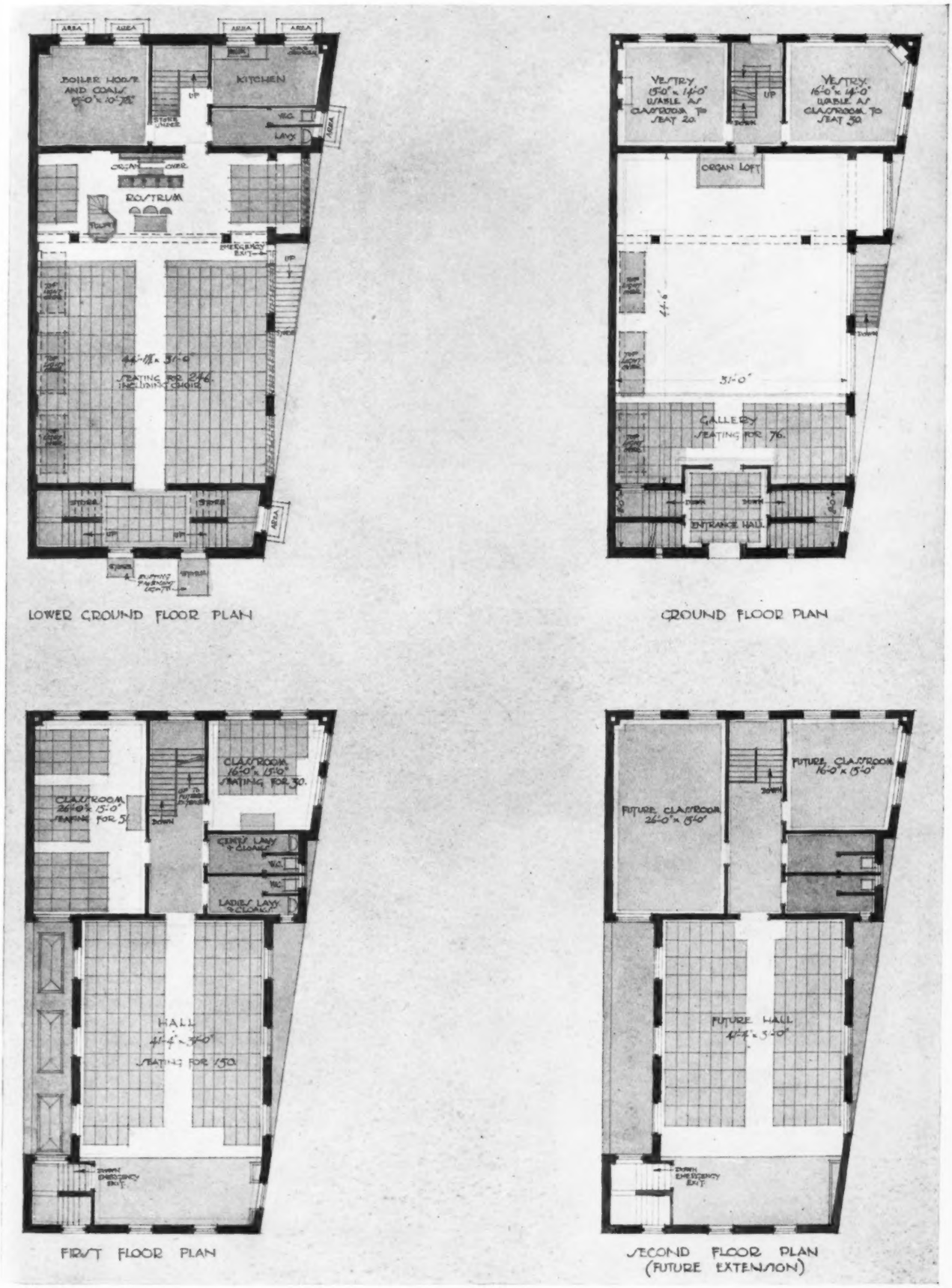
We omitted to state last week, in connection with our notes on Dorland House, that Messrs. E. J. & A. T. Bradford were responsible for the stone carving.

We regret that in our list of sub-contractors for the Shepherd's Bush Pavilion in our last issue the name of Messrs. The Trussed Concrete Steel Co., Ltd., was not mentioned, although, of course, their material, "Hy-Rib," was used to a considerable extent.



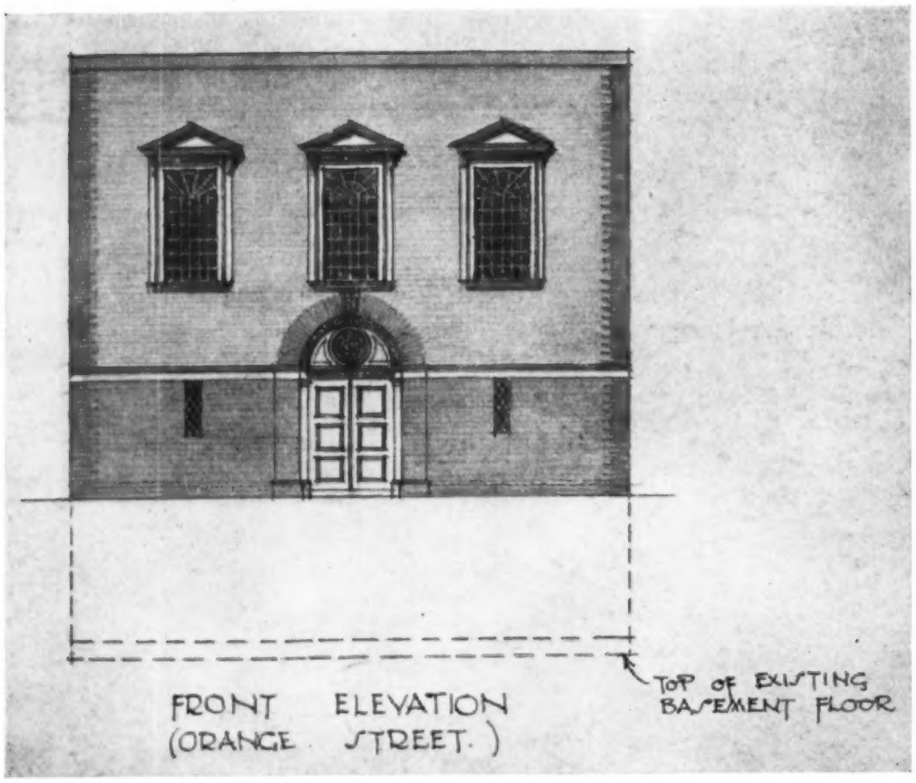
Entrance Hall to Offices at St. James' Park Station.

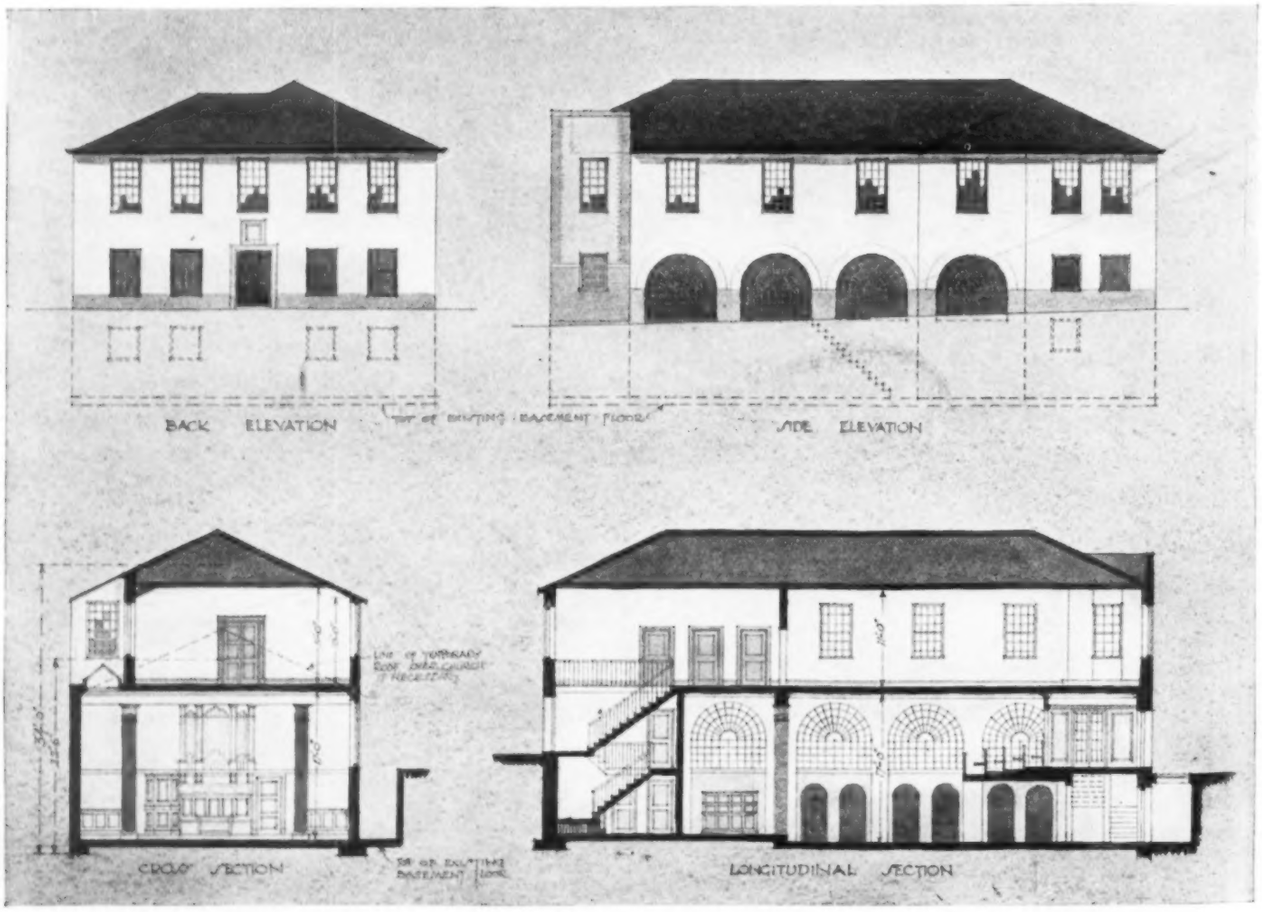
MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects.


BOILER HOUSE AND COALS
KITCHEN
ROSTRUM
SEATING FOR 276 INCLUDING CHOIR
LOWER GROUND FLOOR PLAN
VESTRY 15'-0" x 14'-0" USABLE AS CLASSROOM TO SEAT 20
VESTRY 16'-0" x 14'-0" USABLE AS CLASSROOM TO SEAT 30
ORGAN LOFT
GALLERY SEATING FOR 76
ENTRANCE HALL
GROUND FLOOR PLAN
CLASSROOM 16'-0" x 15'-0" SEATING FOR 30
CLASSROOM 26'-0" x 15'-0" SEATING FOR 51
GENTS' LAVY & CLOAKS
LADIES' LAVY & CLOAKS
HALL 41'-4" x 34'-0" SEATING FOR 150
FIRST FLOOR PLAN
FUTURE CLASSROOM 16'-0" x 15'-0"
FUTURE CLASSROOM 26'-0" x 15'-0"
FUTURE HALL 41'-4" x 34'-0"
SECOND FLOOR PLAN (FUTURE EXTENSION)

Competition for Church and Hall, Leicester-square.

Design placed first: By MR. W. M. KEESEY, A.R.I.B.A.

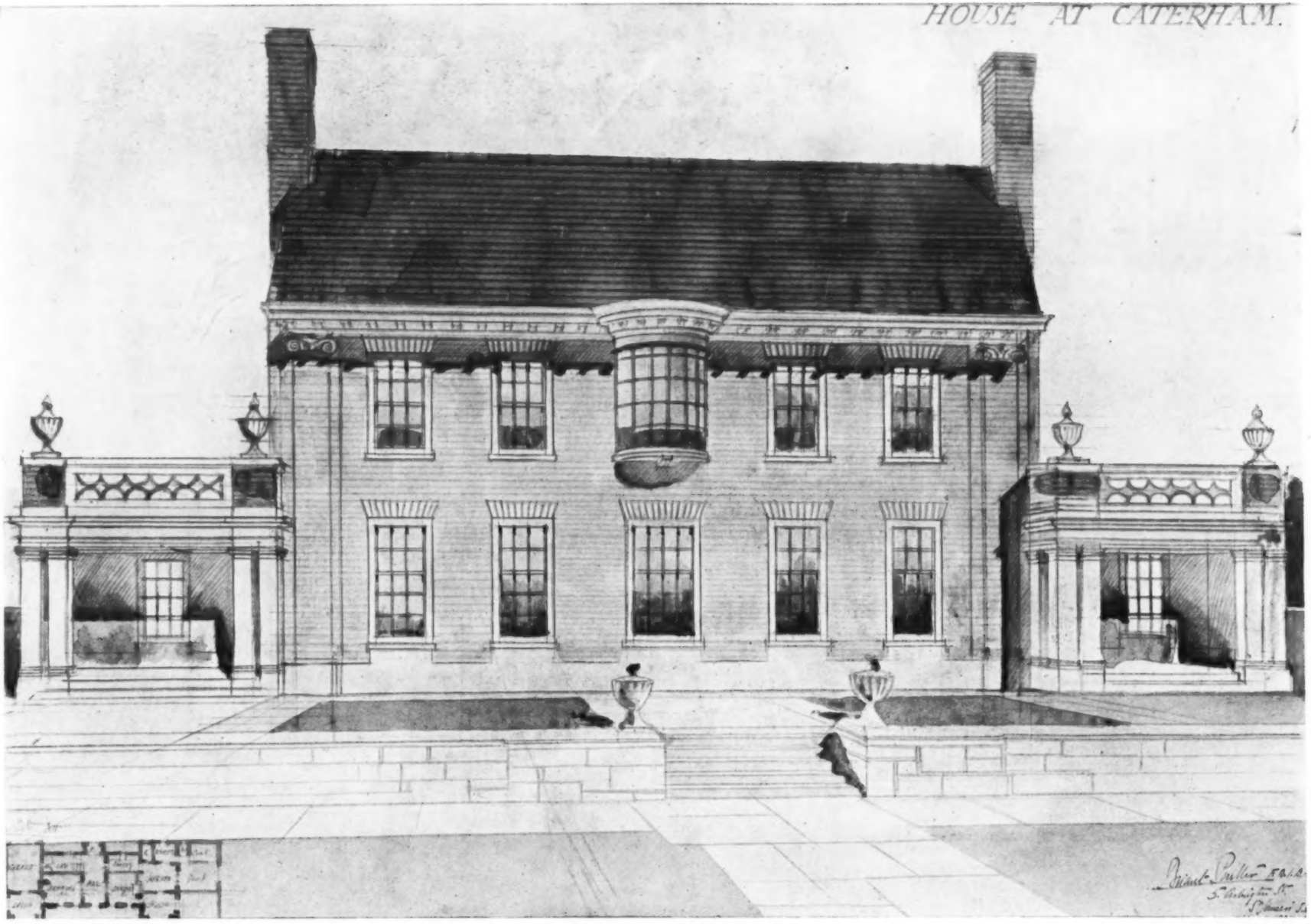




Competition for Church and Hall, Leicester-square.

Design placed first: By MR. W. M. KEESEY, A.R.I.B.A.

Architectural
Library



House at Caterham.

WM. POULTER, F.R.I.B.A., Architect.

House at Caterham.

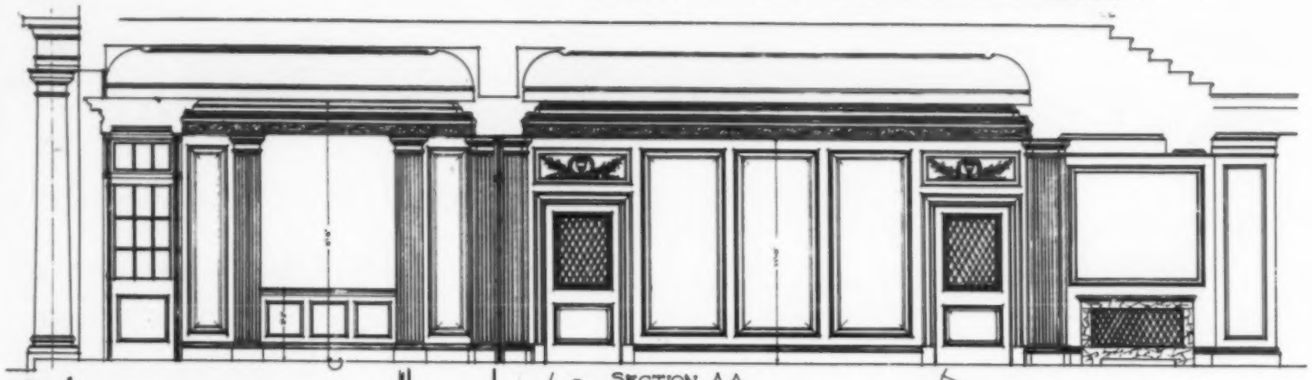
Mr. Poulter, F.R.I.B.A., Architect.

Architectural
Library

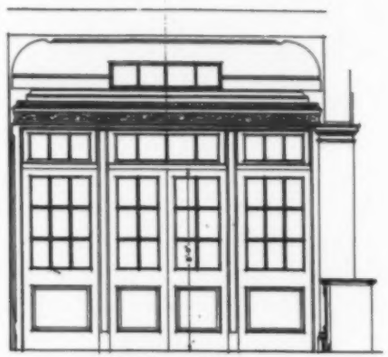
METROPOLITAN DISTRICT RAILWAY ST. JAMES' PARK STATION

ENTRANCE HALL TO NEW OFFICES

No 31



SECTION AA



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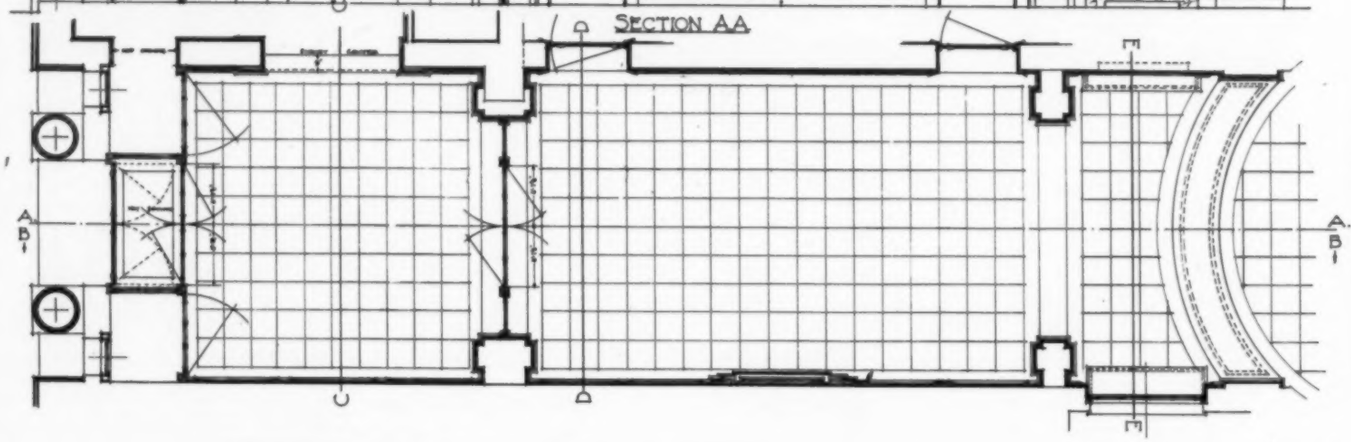

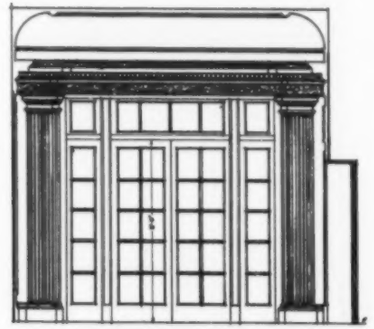

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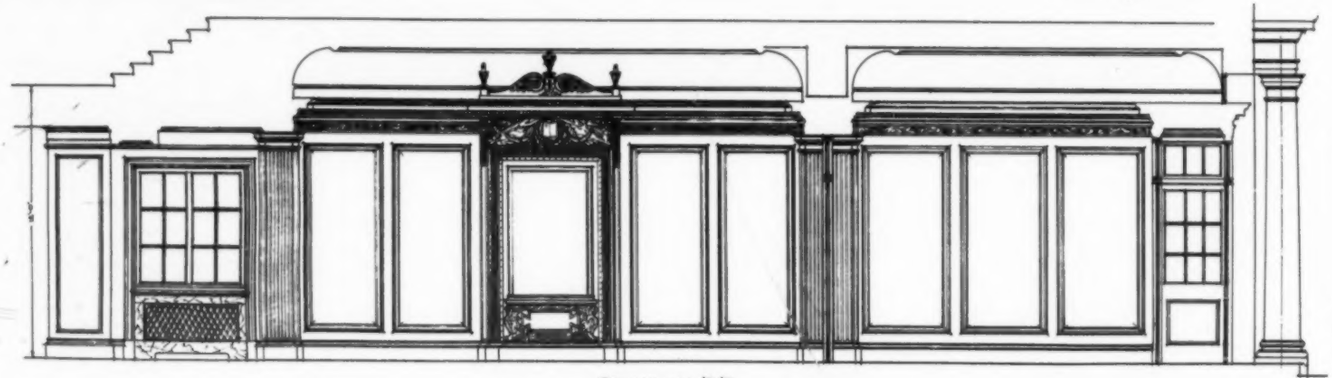

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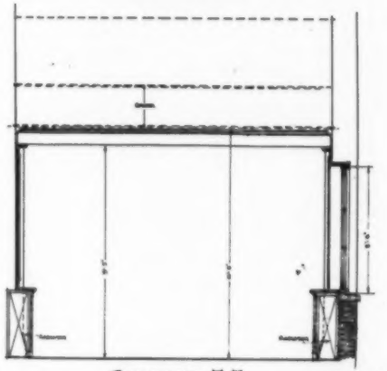


SECTION EE.

MESSRS. RICHARDSON & GILL, FF.R.I.B.A., ARCHITECTS.

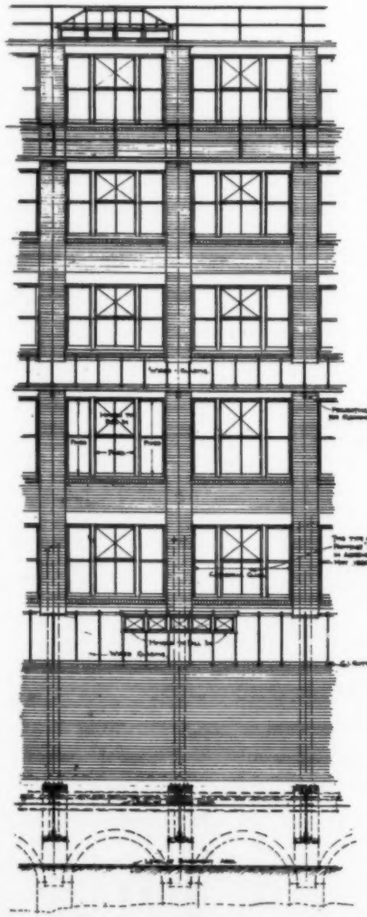
THE BUILDER, NOVEMBER 21, 1924.

METROPOLITAN·DISTRICT·RAILWAY.

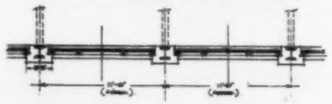
NEW·OFFICES·OVER·STATION.

ST. JAMES'·PARK.

№11

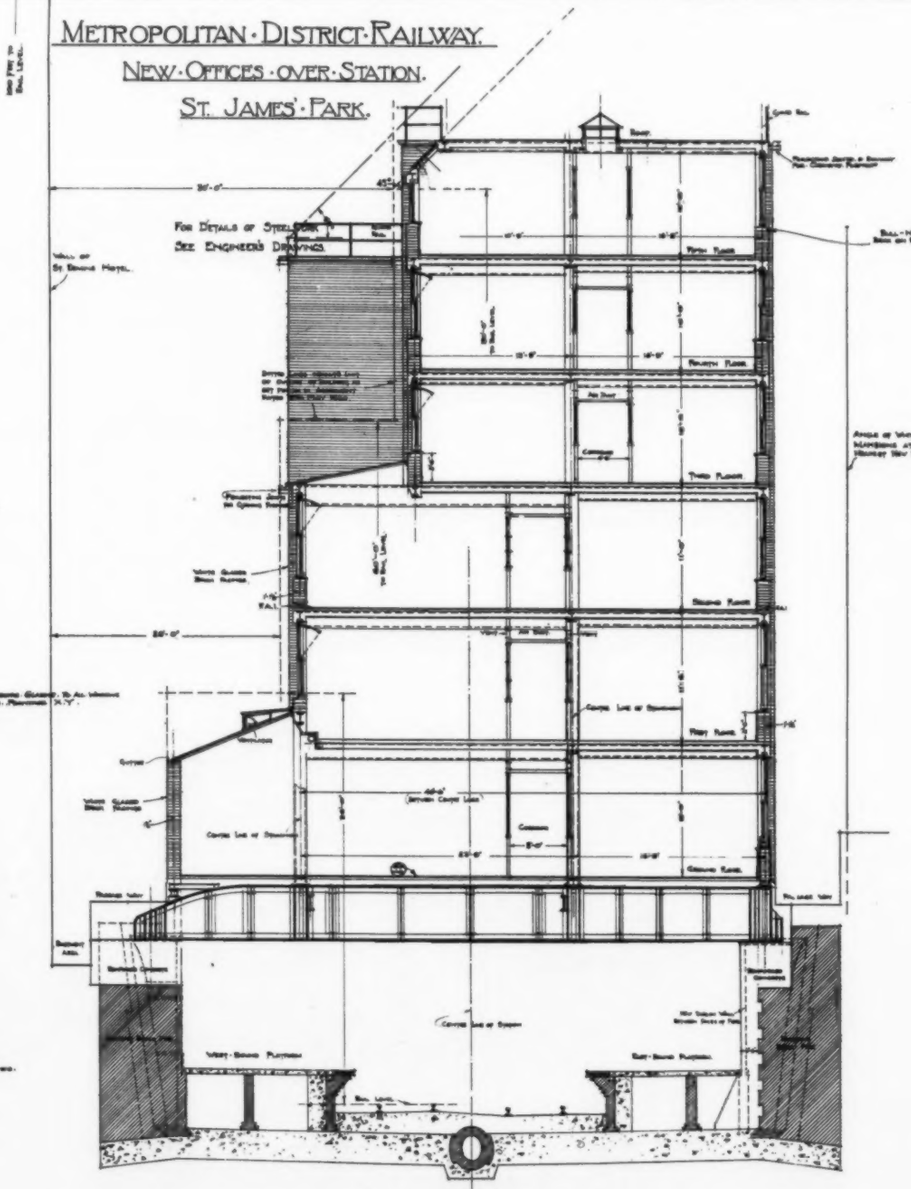


PART OF SOUTH ELEVATION

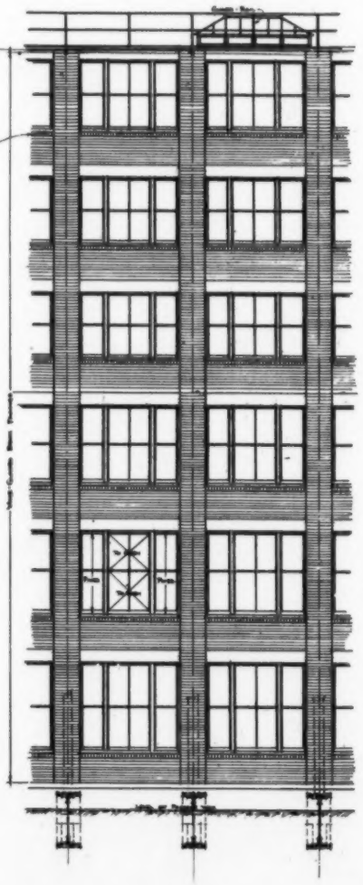


PLAN AT FIRST FLOOR

SCALE OF FEET


For Details of Steelwork
See Engineer's Drawings
Wall of St. Enoch Hotel
Ball-Headed Bars on Base Coil
Angle of White Marbling at Front Against Stay Building
Note: Chimney Guards to be fitted on Pinnacles as N.Y.
Centre Line of Station
Centre Line of Tunnel
West Bound Platform
East Bound Platform

TYPICAL CROSS SECTION
LOOKING WEST, TOWARDS PALMER STREET.



PART OF NORTH ELEVATION

RICHARDSON AND GILL FF.R.I.B.A.
ARCHITECTS
41, RUSSELL SQUARE.

THE BUILDER, NOVEMBER 21, 1924.

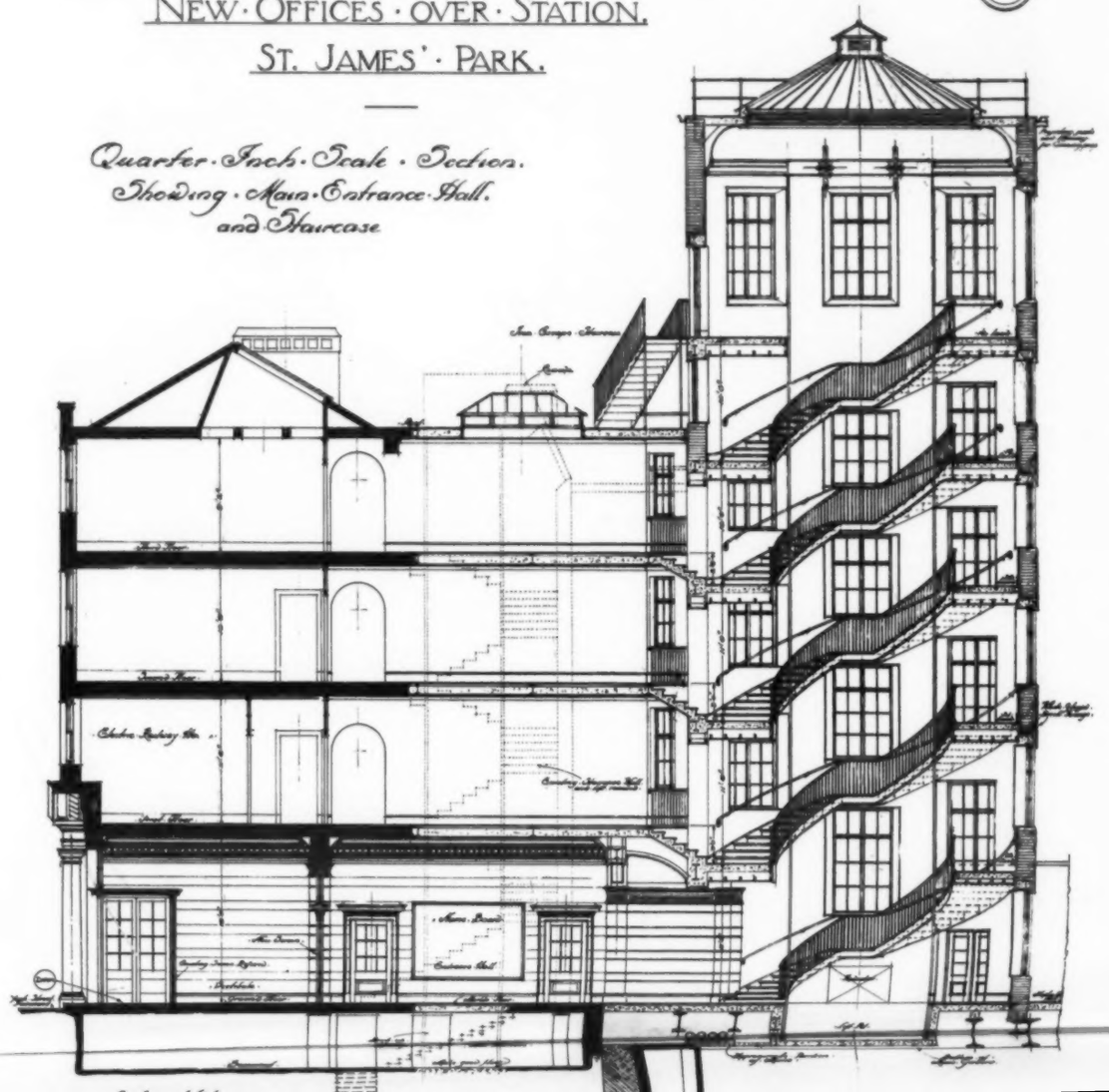
METROPOLITAN · DISTRICT · RAILWAY.

NEW · OFFICES · OVER · STATION.

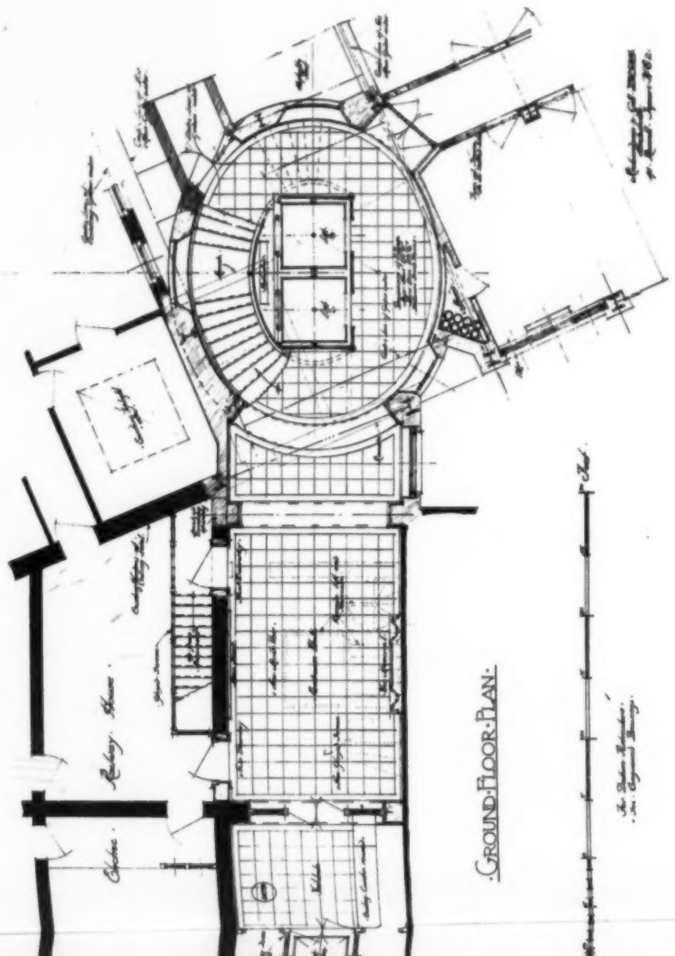
ST. JAMES' · PARK.

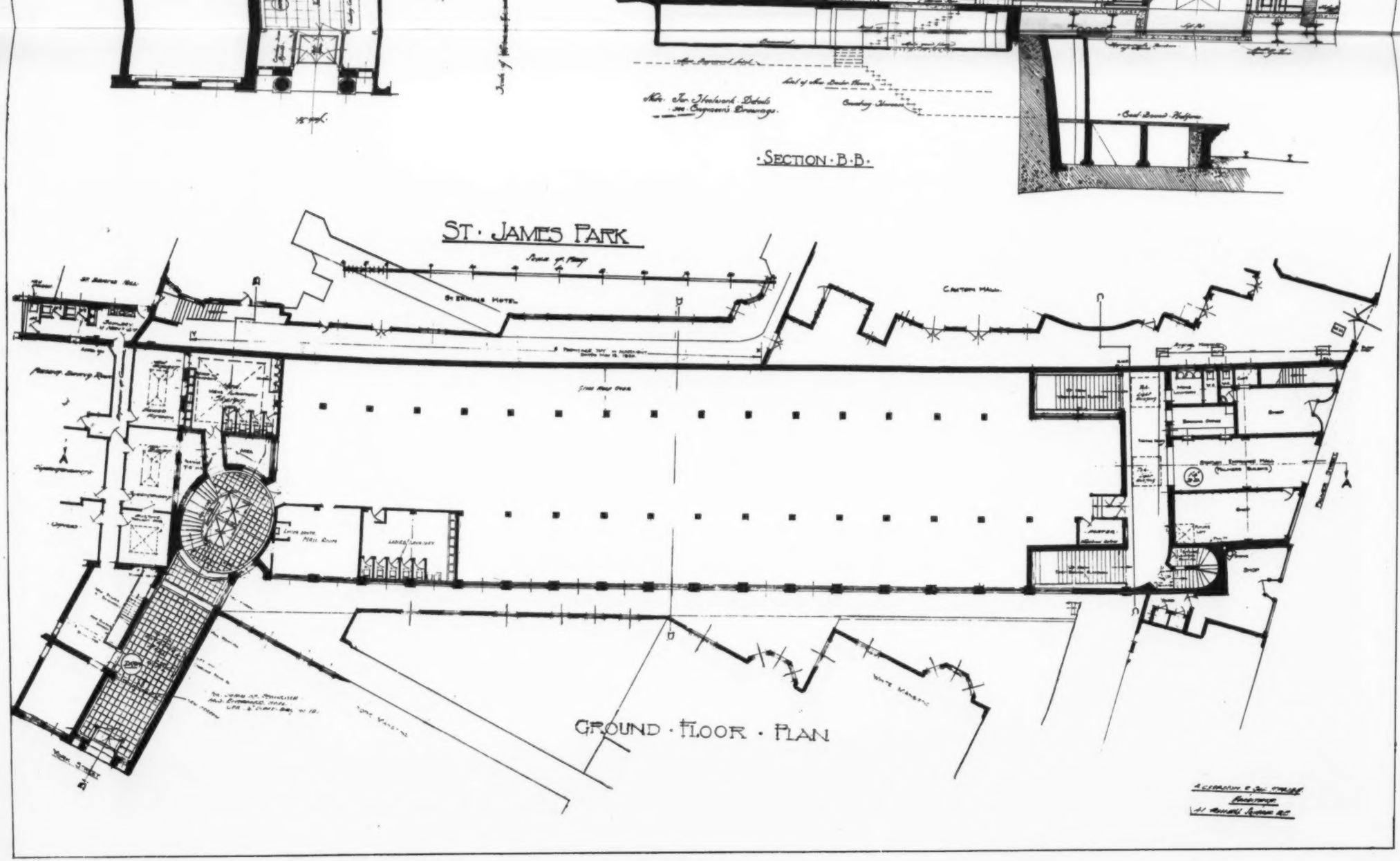
(12.)

Quarter · Inch · Scale · Section.
Showing · Main · Entrance · Hall.
and Staircase



GROUND FLOOR PLAN.





MESSRS. RICHARDSON & GILL, FF.R.I.B.A., ARCHITECTS.

Architectural
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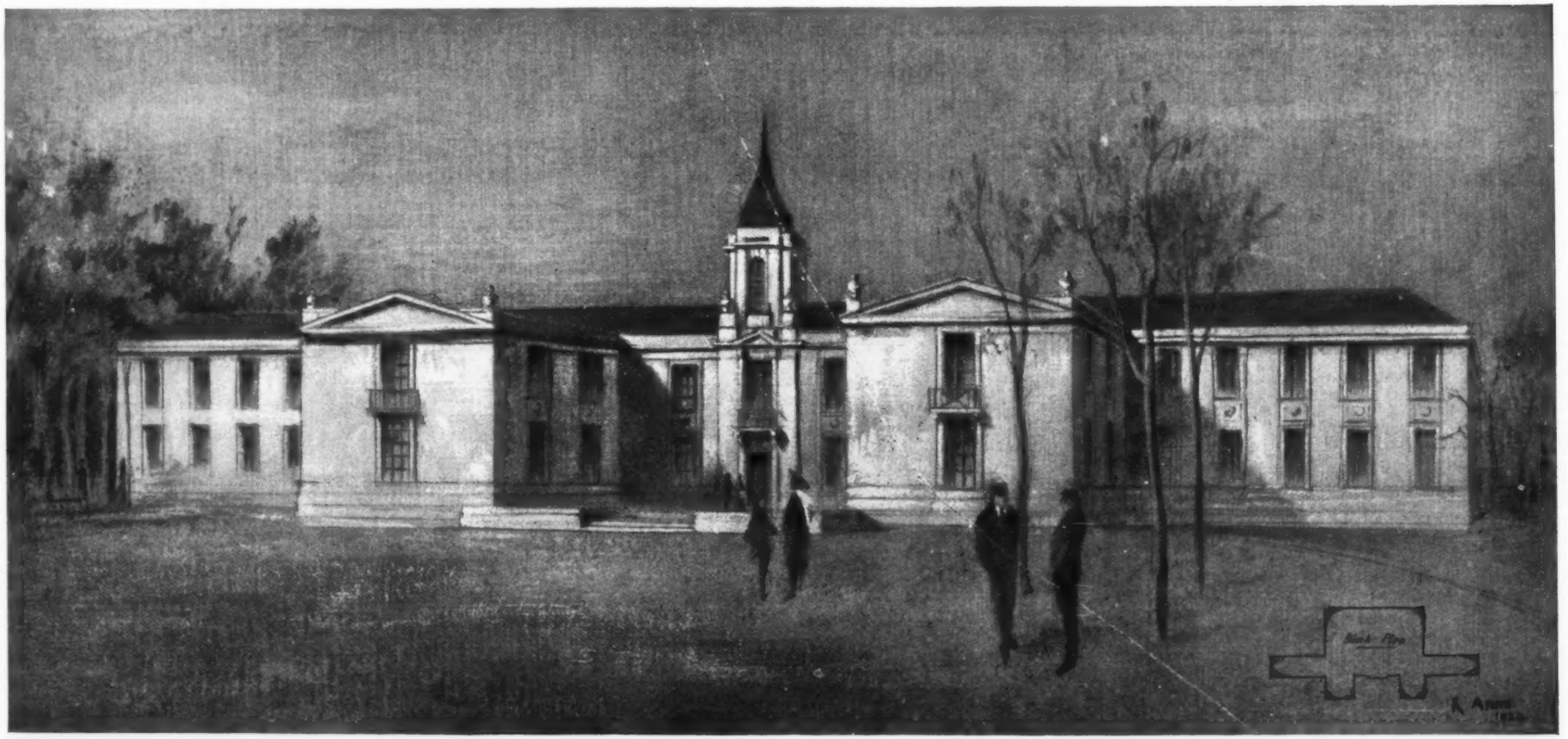

New Science Building, Mill Hill School.

Mr. STANLEY HAMP, F.R.I.B.A. (Messrs. Collcutt & Hamp), Architect.

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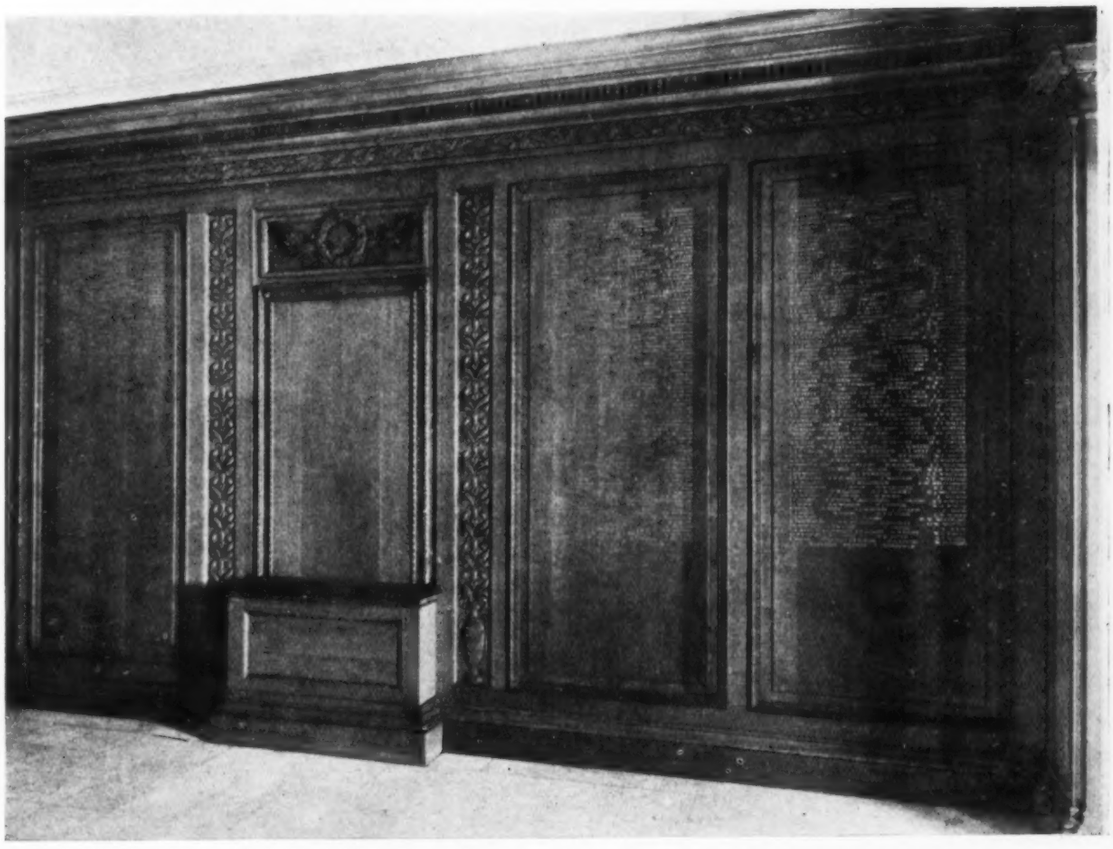
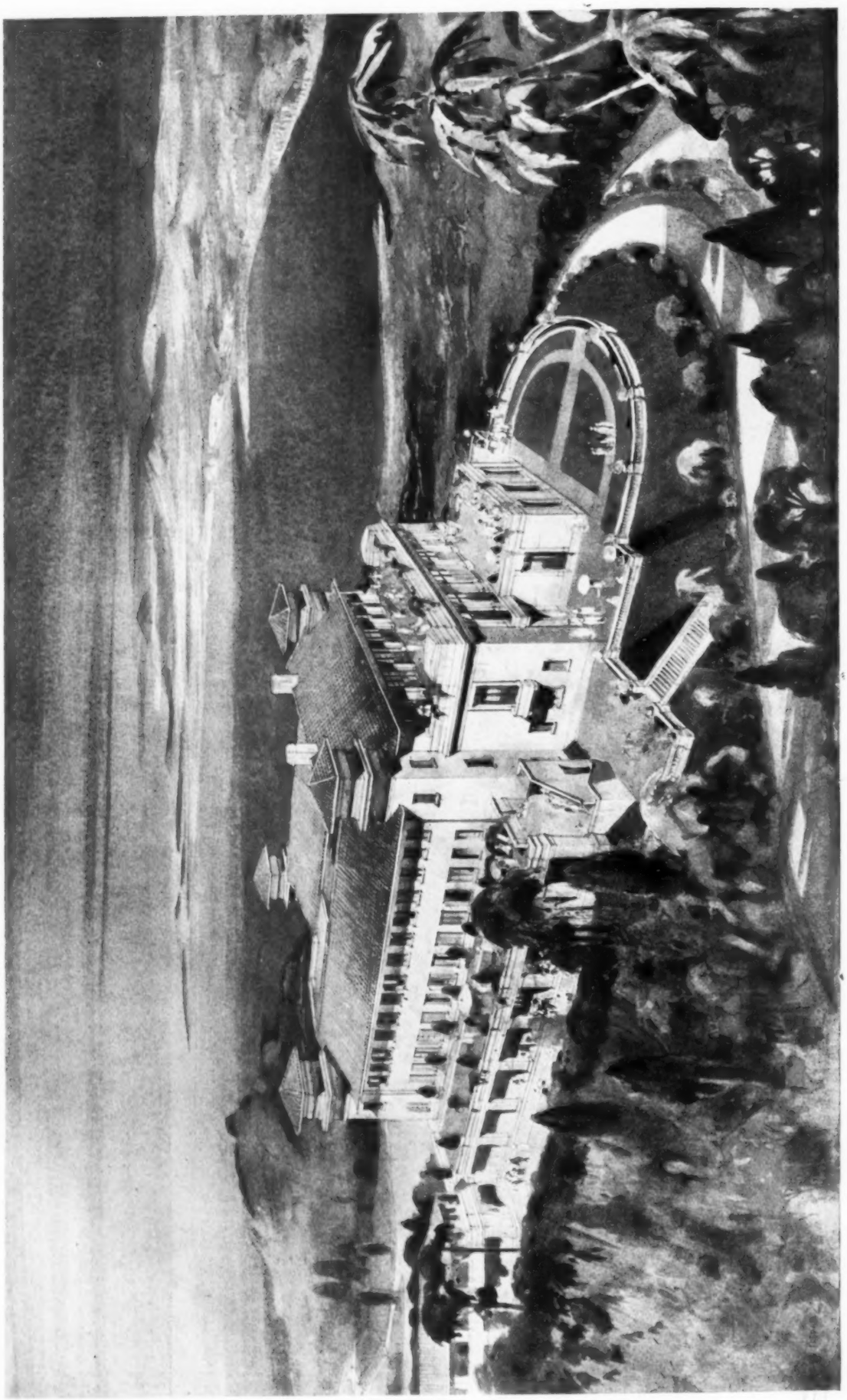
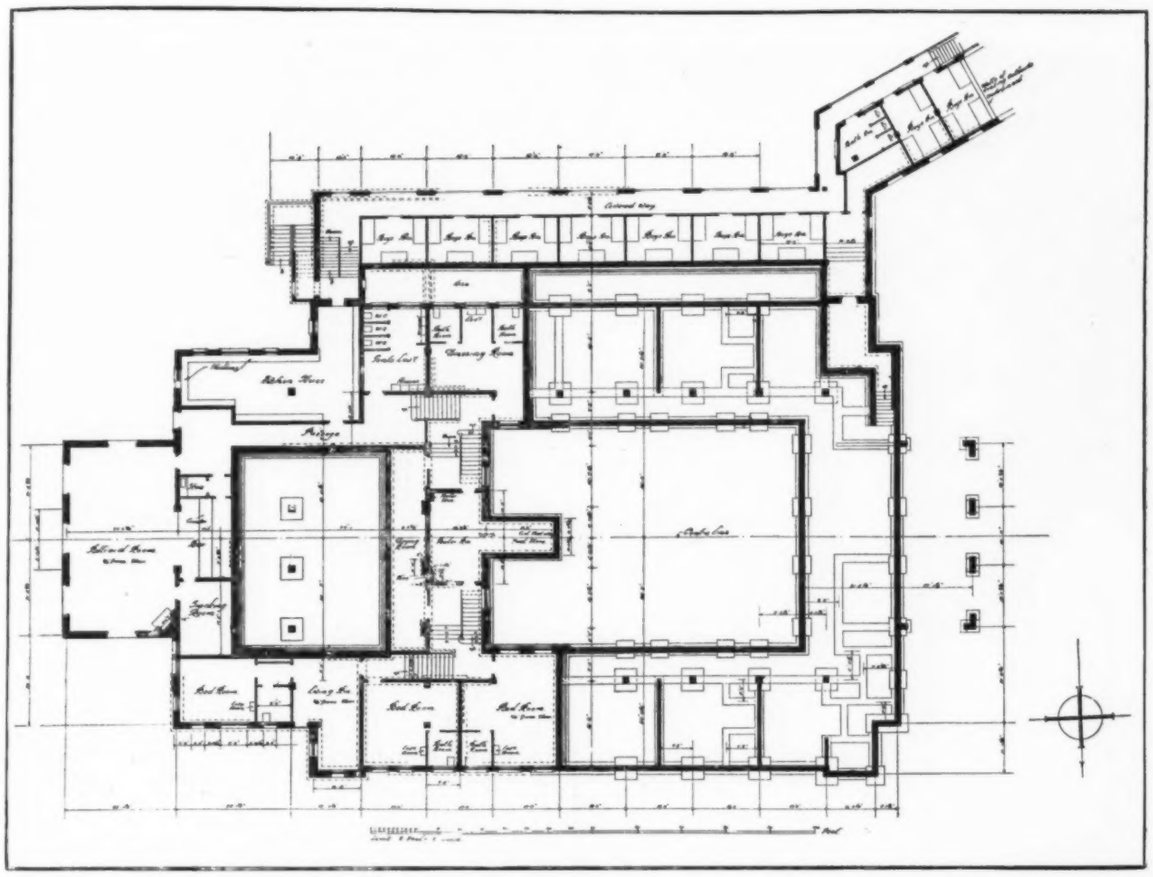


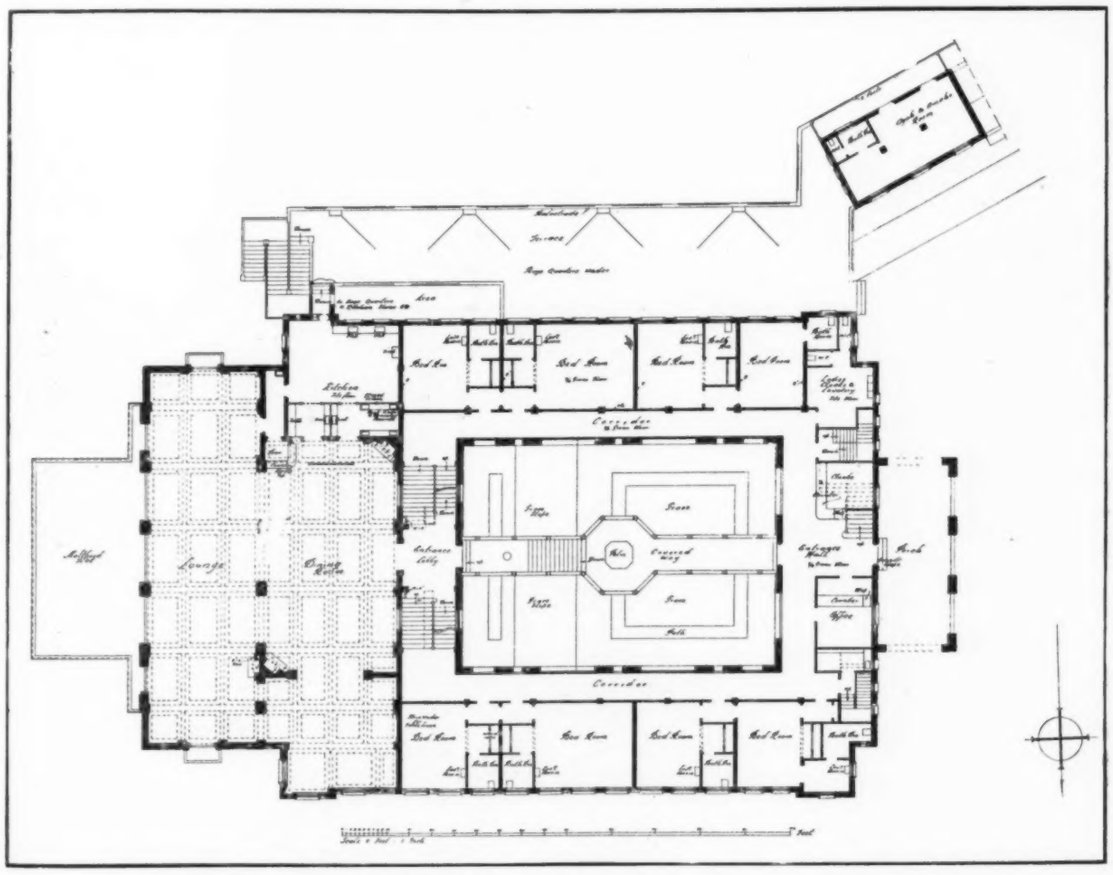
Entrance Hall to Offices, St. James' Park Station.

MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects. (*See p.* 825.)



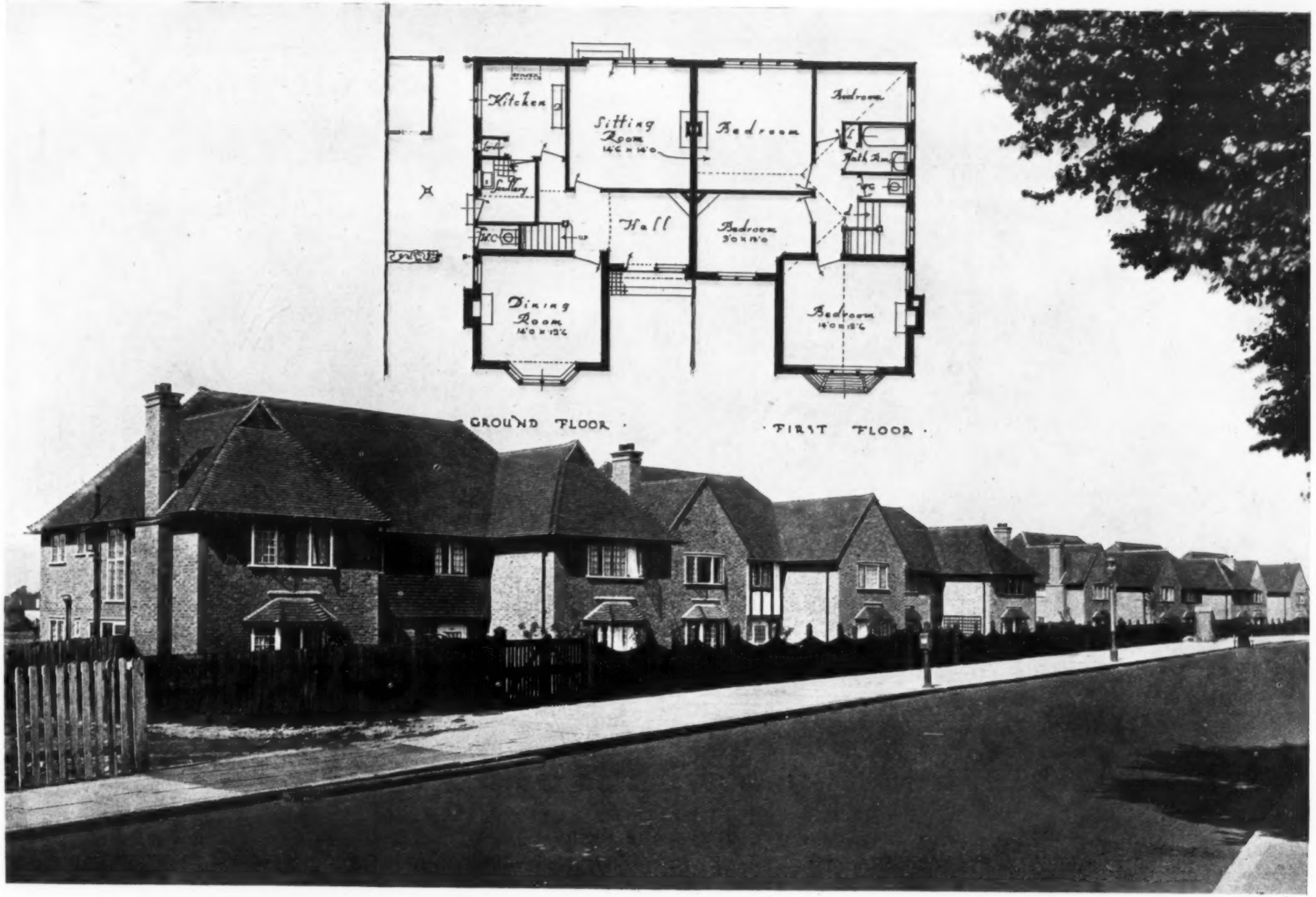
Proposed Hotel, Penang Hill. MAJOR HUBERT KEYS, D.S.O., F.R.I.B.A., Architect. (*See p.* 819.)



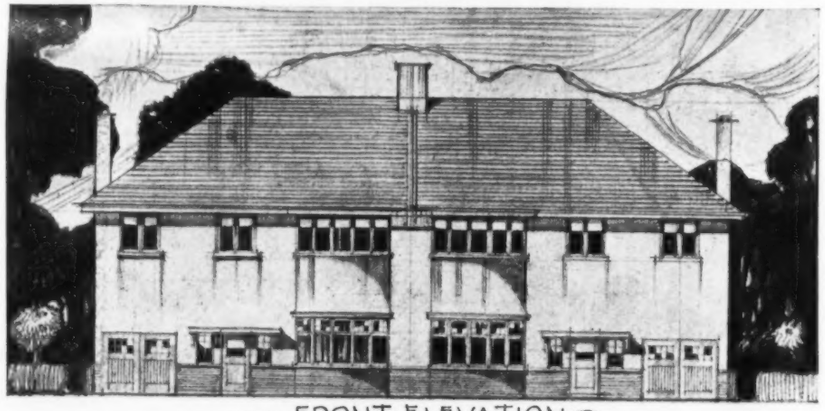


Proposed Hotel, Penang Hill. MAJOR HUBERT KEYS, D.S.O., F.R.I.B.A., Architect.

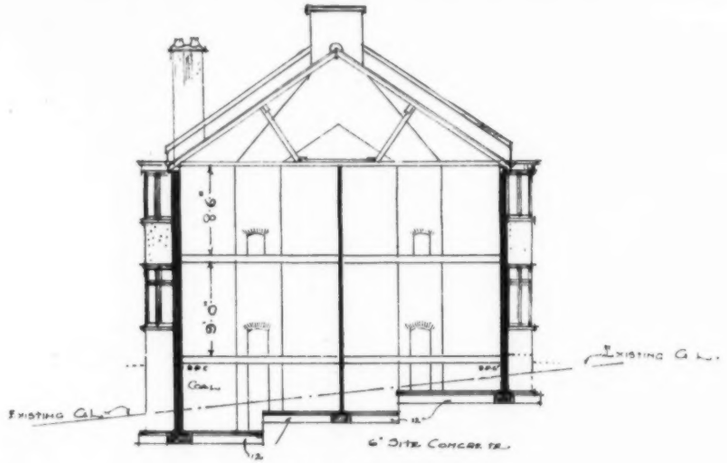
[This hotel was designed to provide accommodation proposed by the Committee especially appointed to carry out this work. Twenty bedrooms, with dining accommodation for 200 people, drawing rooms, billiard rooms, &c., are provided.]



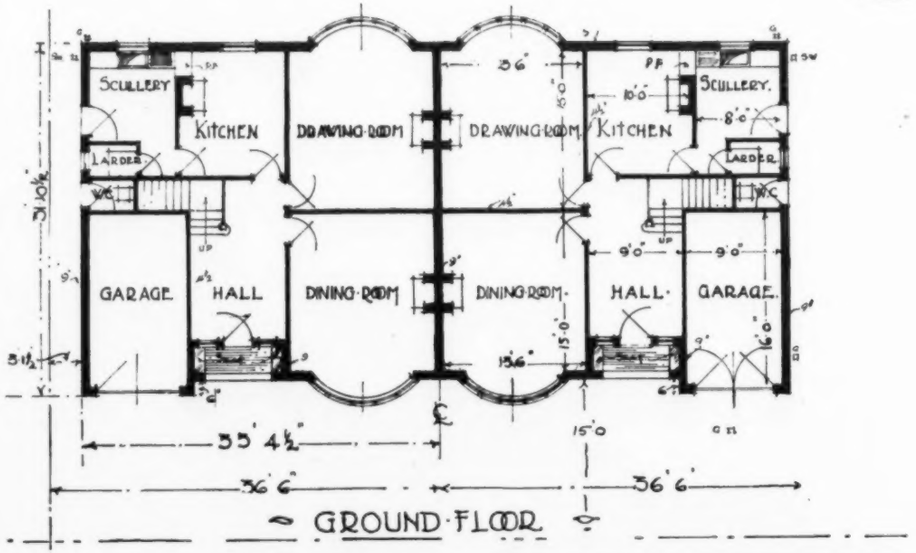
Houses on Barker Estate (Group 1), Richmond. MR. SYDNEY E. CASTLE, M.S.A., Architect. (*See p.* 814.)



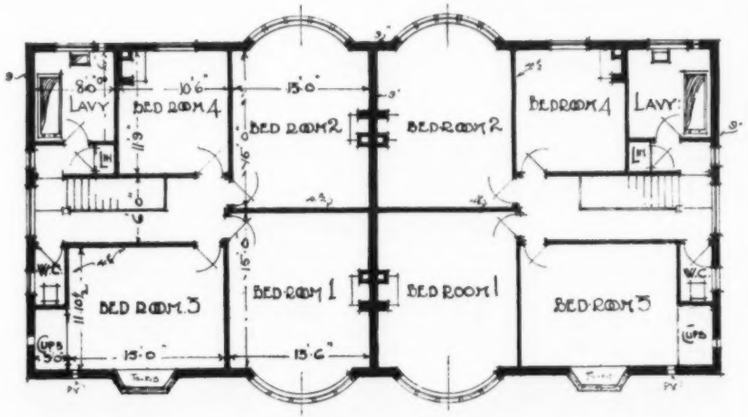
FRONT ELEVATION



SECTION



GROUND FLOOR



FIRST FLOOR

Houses on Pages-lane Estate, Muswell Hill. MR. VERNON A. BROWN, Architect

[The Pages-lane Estate will comprise about 60 houses, semi-detached and detached, of three to five bedrooms, garage, &c. The houses are of brick, and in some cases faced with rough-cast. The estate agents are Messrs. Sydney Bowyer & Co., Muswell Hill, and the builders are Messrs. Ellyatt & Co, Colney Hatch.

WESTMINSTER ABBEY RE-EXAMINED—IX

BY W. R. LETHABY.

SCULPTURE AND COLOURING.—II (*Continued from p.* 729).

Whitening, gold, and colour.—The purpose of these chapters is to understand and "see" as far as possible how the church was built and what it looked like in its first freshness; sharp, unencumbered, light and undirtied. We must try to gain some idea of the fairness of the exterior—mostly as white as flour, but here and there touched with colour and gilding. From the wide spaces of the interior we must banish the terrific modern monuments, many screens, and the seating which hides the columns as they rise from the once shining floor. We must hold in mind the fact that the church was flooded with light passing through glass which was not only transparent but glittered.

Besides these main conditions the internal effect depended on the large use of polished marble in varying tones of grey; on the whitening and red lining of the whole of the masonry where not otherwise decorated; on a lavish use of gilding; and on the assembling of specially splendid objects such as the gold shrine, the exquisite retable, and the polished porphyry floor—like glass mingled with fire.

At Westminster the remnants of the original decoration are so few and small that it would hardly seem possible to find sufficient evidence for the original scheme, but comparison with St. Albans, Salisbury, and other great churches prepares us in such a way that the merest hints allow of large conclusions. The schemes of decoration of a dozen great churches might now be worked out in quite a trustworthy way. Some who are not well acquainted with these results, when they hear of the tale of white and vermilion, azure and gold, hasten to say that they would not "like it." But the people who did it loved bright things, and students who have come to see just a corner of this field of gleaming beauty are likely to tell us "We like it very much indeed, thank you."

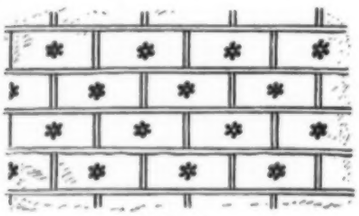


FIG. 17.

FIG. 18 (Half-size).

Parts of marble columns which have been protected here and there yet retain some of the original polish. A window recess now blocked at the end of the wall passage around the southern apsidal chapels had still, when I saw it some dozen years ago, the stonework covered with the original whitening, red lining, and roses, a precious remnant of the general decoration of the wall surfaces (Figs. 17 and 18). From many orders of Henry III we know that it was the common fashion of the time to whiten walls and divide them up with red lines into spaces of the shape of large bricks with sometimes a simple flower in each. This was called pointing, quarrying, or illuminating. To the roses we have more than one allusion. In 1240 the King ordered that the Queen's chamber in the Tower should be "thoroughly whitened internally and painted with roses." The wall whitening at the Abbey was being done in the year 1253 by Adam the *dealbator* and his mate. Scott knew of the wall decoration. His son, G. G. Scott says: "The interior was whitened and stoned in red lines. The diaper work of the triforium was gilt on a red ground; the sculptured bosses were gilt and coloured."

I have not found any direct proof that the diaper of the triforium was coloured and gilt, except that the diaper in the eastern arcade of the Chapter House still shows traces of gold and red. I have little doubt, however, that the diaper of the apse and presbytery was at least intended to be gilt. Gilding of the interior was one of the ideas taken from the Ste. Chapelle, where the whole interior recalled a goldsmith's shrine.

There are traces here and there that the wall-arcade was painted; in a protected part behind a big tomb in St. Benedict's Chapel the capitals are copper-green and the roll mouldings red. In the bay over the mosaic tomb in the south ambulatory the capitals are gilt, but the painting here seems to be later work. In several places red remains in the spaces under the arches. The shields of arms in the wall-arcade of the Choir must have been painted from the first, as they are at present.

The ribs and bosses of the high vaults of the presbytery and choir are gilt and this has certainly been so from ancient time. Keepe (1683) writes: "The vault whose arches dividing themselves into several squares compose a most stately roof, wrought with divers figured stones [bosses], and in some places curiously gilt with gold." Hatton (1708) says: "The next thing remarkable in the ornament is the gilding of the arches over the chancel, done in gold, which has been of many years' continuance." Wren, in his report on the church, says: "The vaulting of the Quire, though it be more adorned and gilded, is the worst performed." Crull (1713) writes: "You may still perceive that the arches of the roof of this Quire have been richly gilt and are at this time adorning with new gilding as well as the cross aisle [transept] on the south side."

The new gilding was done during Wren's great work of restoration, begun in 1698. In 1700, Samuel Clothier and David Legge, painters, were engaged "painting upon stone in imitation of Sussex marble in the ribs of the two bays and face of the great arch over the choir . . . being first thoroughly soaked in oil." Other items are "Raffled leaves round the 5 roses"; "for laying 5,550 of double gold upon capitals, ribs and roses." The roses are the bosses, the raffled leaves are borders round them on the field of the vault. The latter and bands up the sides of the ribs may be over old painted work. The account for gilding is followed by "The gold beater's bill." Large surfaces of the interior seem to have been covered with drab paint and this may be what was meant by "painting in imitation of Sussex marble."

The sculptures of censing angels high up in the south transept were fully painted, and this is evidence for all the spandrel carvings. In 1910 I examined the angel on the left from a ladder and found red in the creases of the drapery. On the upper garment was a pattern of three spots distributed at intervals (∴ ∴). The right-hand angel had stars on the drapery, which are plainly recorded in the drawing of Fig. 3. I also have a note of traces of gold. Patterning of draperies in this way was common in paintings of this time (see recently issued "Life of St. Alban"). There was red also on the little lion below the angel on the left. Photographs of the angel spandrels at Lincoln given in Prior and Gardner's "Sculpture," show that they too were coloured and had painted square-diaper backgrounds that appear to have been adapted from the carved square diapers at Westminster.

The tombs of the interior, lately cleaned, show what the painted sculpture was like. The knights and ladies had bright eyes, flushed cheeks, and coloured garments. The effigy of the Lady Aveline was painted all over, she had a red robe and green mantle lined with blue. The pillow was diapered with coats of arms, which were painted in transparent varnish colours over gold. Crouchback's effigy had a red surcoat diapered with a pattern imitated from the Retable; on the front of it was a big coat of arms. The flesh was painted, the cheeks flushed, and his eyes had blue circles. The little angels at his head were fully coloured, and their hair was gilt. On the edge of the slab could be read, "Ici gist Emon Fiz [Henri jadis Roi d'Angleter ?]re."

The weepers had red cheeks and painted garments—in some cases at least these seem to have been in varnish colour over gold. The ornamental painting of these two tombs was so elaborate that no description would serve without full illustration. Little panels were inlaid with glass over pattern-work on gold, other parts were in raised gesso gilt, even the little knight in the gable of Crouchback's tomb had red cheeks and he rode a dappled horse.

The wooden sedilia opposite were decorated in the same way; the carved heads on the canopies were like "waxworks." The tomb of Aymer de Valance also followed the same general scheme, but it was simpler. There was still much gilding on the prominent mouldings and the carvings, so that the general aspect was that of a gilded work. Panels, hollows of mouldings, and other plain spaces, were coloured red and green with smaller quantities of black and white to clear and harmonise the whole. The effigy with little angels and the weepers were fully coloured. The weepers stood against backgrounds alternately scarlet and green, spotted with gold; the small pillars between were patterned alternately gold and black and gold and red with hollows at the side alternately green and red (Fig. 19). The chamfers of the panels and the delicate tracery above were a fair ivory white with gilt fillets. The bases of the little shafts and the plinth mouldings were

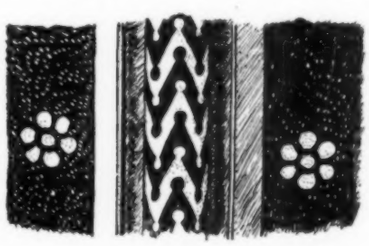


FIG. 19.

"marbled"—an innocent little spotted colouring, but still marbling.

The tomb of Queen Eleanor was of polished Purbeck marble, with gilt carving harmonising with the gilt bronze figure. Recent cleaning showed traces of the brightest red on the iron railings, which appeared to be original, and it

is recorded that there was painted pattern work on the railings of Henry V's Chantry.

The cloister, so far as built by Henry III, was painted like the church. The sculptured entrance to the Chapter House was brilliant in gold and colour. In Allen's "History of London" (1828) is this description: "One range of the mouldings [of the arch] contain circular scrolls [of foliage], which have been gilt, and the depths coloured black and another scarlet; a third is divided into small niches by waved scrolls, and within these are twenty [little] statues—the Blessed Virgin and infant Jesus, and David, much broken. Fragments of the paint and gilding yet adhere on various parts of them, enough to show their former splendour. Before this doorway, the vaulted roof [which is later than the doorway] has a greater number of ribs than the rest, and some of the keystones [or bosses] are rich in carving and gilding. The remainder of the divisions on the east wall [of the cloister] have a string of gold once about 3 in. broad, horizontally about 3 yds. from the pavement. The wall was painted a dark colour, on which are a number of white trefoils." (Compare Ackermann.) One of Neale's plates shows this band in the cloister, which had a scroll pattern.

The general original ground wash would have been white with red lines struck on it. Many traces of such a treatment exist in the cloister of Salisbury Cathedral.

Comparison with the façades of Wells and Crowland and the great porch at Lincoln shows that the sculptured portals at the Abbey would have been painted and gilt. Masonry within and without was not properly completed until it was washed over and "illuminated." This traditional treatment, as Burges remarked, was really a necessary protection to stone work. In our climate we must paint or it will rot. What was founded in necessity, however, flowered, under the magic hands of mediæval craftsmen, into fairy beauty.

Later work shows the same liking for gay colour. The small chapel, usually called after St. Erasmus but properly Little St. Mary's, opposite the tomb of Aymer de Valance, and founded by his widow, Mary de St. Pol, preserves much colouring which has recently been better revealed by cleaning (March, 1923). In a shallow niche fronting the door is the general form left by the removal of a carved image; from the head of this long rays radiate over the background. The vaulting is starred in red on a white ground, ribs have barber's pole bands and rosettes; the boss is a pretty little Assumption of the Virgin. The walls are spotted over with pine-shaped units on each of which is a fleur-de-lys. This pine-shaped element was very popular in the latter half of the fourteenth century; it appeared in St. Stephen's Chapel, and is found on existing Norwich paintings (Fig. 20). The wood door was also gaily painted. In the Muniment room is a wooden partition (*temp.* Richard II) painted bright red and powdered with white stars (Fig. 21).

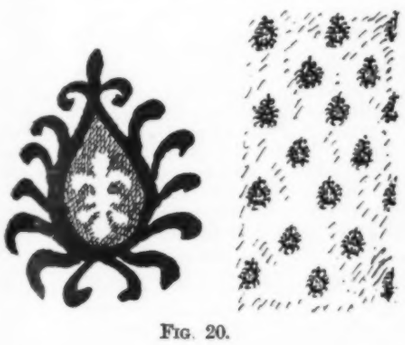


FIG. 20.

The fifteenth-century altar-screen was fully decorated in colour, and some traces still remain on the east side. The backgrounds were bright red and blue. The soffits of the canopies are carved into a delicate network of tracery, the interstices of which are red and

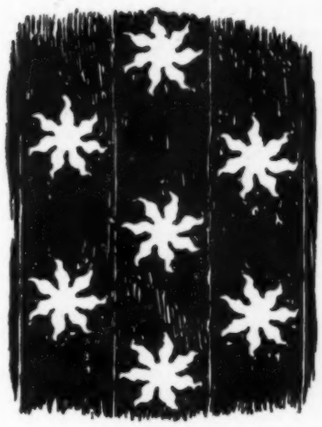


FIG. 21.

blue. Above the canopies the space in the centre is red while the rest was blue. According to Neale there was much gilding and raised patterns which would have been in gesso.

There are still traces of Catherine wheels of gesso on the elaborate tomb of Lord Bourchier which forms a screen to St. Paul's Chapel; as Neal says, they were "thickly powdered" over the monument and gilt. His engraving shows them and also the band of angels above each holding a pair of painted shields and having gilt wings. This tomb also has lately been cleaned. The cornice and battlement

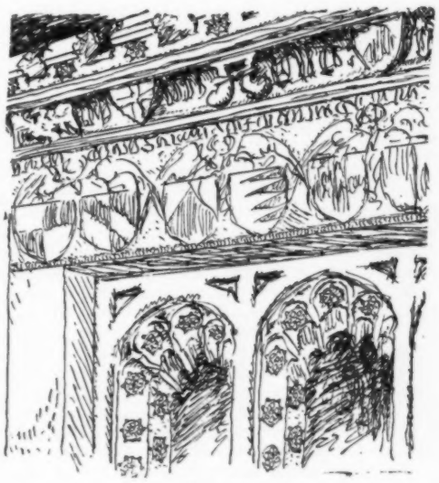


FIG. 22.

were blue picked out in gold, as apparently was the whole work. In the hollow of the cornice between the arms and badges was an inscription in big gold letters: "Non nobis dñe non nobis sed nñi tuo da gloriam," some of which can still be read. Below, on two deep bands, several of the shields can be distinguished with traces of the angels' wings. The bands were edged at the bottom with a fringe like the vallance of a funeral hearse. There was further lettering over the shields, in white on black, which is given in Keepe's MS. as "+ L'onnour a Dieu a nous Merci + " and "+ Learne to Dye to live ever+." These were several times repeated. According to Keepe's drawing the big flags and the Lion and Eagle which support them on either side of the monument were fully coloured and traces of this can still be seen. The sides of the tomb proper have quatrefoil panels with red and green fields alternately, the colours counterchanged on the chamfering. Keepe gives twenty-two shields of arms which he says were of "the nobility both of England and of Henault, viz., Robsert Bourchier, Swinford, Chaucer, &c." (Fig. 22).

The chapels on the east side of the north transept were dedicated to St. John Evangelist on the south, St. Michael in the middle, and to St. Andrew on the north. The Chapel of St. John had a screen which Keepe says was "adorned with several carvings and coats of arms, by John Estney Abbot, painted and gilt with gold, who lies on the south side with his effigies engraven on brass; he died 1438." Dart says the screen was wood finely carved and gilt. The middle chapel still has the ruin of a fine late Reredos. A sculptured figure of the Virgin and Child painted and gilt, a fragment of which now rests in the St. Erasmus panel in the north ambulatory, may have belonged to this Reredos. According to Keepe "the screen of St. Andrew's Chapel was adorned with imagery work of birds, flowers, cherubim, devices, mottoes, and coats of arms." A drawing (dated 1722) of this screen, which Dart says had been destroyed, has lately been presented to the Abbey from the Gardner Collection.

It was of stone tracery with a central door in the spandrels of which were two big crowned eagles holding inscribed labels; above was a blazing sun or rose, and a long inscription on either side of it (Fig. 23). On a handsome carved cornice were arms with trees and inscription ribbons between. Rising from the cornice were two pinnacles. In Keepe's MS. collection in my possession are further details and a copy

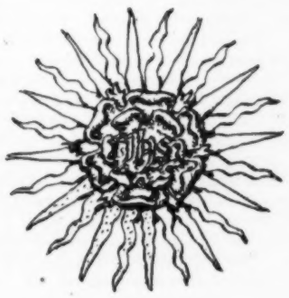


FIG. 23.

of the inscription. The sun surrounded a red rose on the heart of which was inscribed I H S; it was a symbol of the Virgin—*flos florum*. The inscription (Fig. 24) ended with the date 1467. Thirty shields of arms are given; the one in the centre bore the device of the Trinity, two others were the ordinary Abbey arms and the keys of St. Peter impaled with the Confessor's Cross. The birds in the cornice were gilt eagles and black ravens holding labels inscribed *Kyrie Eleson*, doubtless Kirton's motto. (In giving a sketch of this in 1906 I understood the carving to be a wooden cresting, but as now said, it was part of a stone cornice.)

There was much painting of later date in the cloister. Keepe says that at the entrance towards the west was a crucifix with the Virgin and St. John "curiously painted and very pitiful to behold." Round the cloisters were other paintings "with variety of verses alluding to the history of the foundation and the figures." Opposite the walls were "windows of tinctured glass" [in the tracery only]. The description by Allen quoted above goes on to say that the north-west bay of the cloister "has been painted with orange-coloured sprigs on a dark

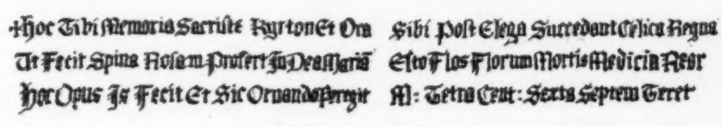


FIG. 24 (Rose was in centre).

ground." In the south-west bay above the entrance are "fragments of black-letter inscriptions on serpentine labels."

A fragment of this lasted on until Micklethwaite's time, who says that above the door, "on the wall just below the vault are a few mouldering elements of a picture" [the Crucifixion ?]. All that can now be made out is part of a ribbon with an inscription in letters of about 1500, which Mr. J. T. Fowler has read with some hesitation, "*in s'cla s'clorum. Amen.*"

As lately as October, 1923, colour was found on the ribs of the cloister vault in the south-east bay—red on the rolls, fair blue in hollows, and a morsel of gold on the boss. It is clear that the whole cloister was as clean and bright as paint could make it.

Feckenham, the restored Abbot, accomplished a considerable work in refitting and redecorating the church. In 1557 the Confessor's coffin was put back in, rather than on, the marble basis. A quite pretty shrine-like structure of wood—recalling in its form the old shrine proper—was set above the basis where it yet remains. The

FIG 25.

marble work received an additional cornice, and large spaces, where the mosaics had been picked out, were filled with plaster, and had the patterns completed by painting. A new inscription was painted around the frieze signed by the Abbot's monogram. Remnants of plaster filling are found on the mosaic tombs of Henry III and of Katherine. Several of the Royal tombs around the Confessor's shrine received new painted inscriptions which have recently been more clearly revealed by cleaning. The often-quoted words PACTUM SERVA on the tomb of Edward I, belong to this work. These inscriptions are in a good form of Roman letter (Fig. 25). The old sculptured coats of arms in the choir aisles were now repainted and inscriptions written over them in "Lombardic" characters. The continuation of the heraldry to the west end seems now to have been done

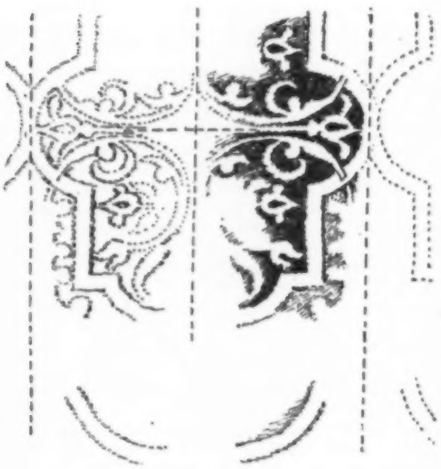


FIG. 26.

for the first time. The recess where the tomb of Katherine is also appears to have been painted at this time. Recently a fragment of wall-painting of Holbeinesque style, and very pretty, has been discovered in one of the Canon's houses (Fig. 26).

CAMBERWELL SCHOOL OF ARTS AND CRAFTS

ANNUAL EXHIBITION.

THE exhibition of work by students of this school, which closed last week, well repaid a visit from those who wished to acquaint themselves with the methods and direction of such teaching. For the doubts which some have felt as to the adequacy of this collective instruction in schools as an alternative to the old apprenticeship system, and that it would be lacking in practical character, would have been a good deal resolved by a visit. We have, in fact, to recognise the school method as definitely replacing the old one. Government schools of art have been subjected to some criticism, not always unjustly, and they no doubt differ in character, but under enlightened direction, such as guides the work in this school, it is difficult to sustain objection. Results go to show that the training is very practically conducted and likely to have a very healthy effect on the conduct of industry. Mr. Thorogood, who is in charge of the Camberwell schools, is himself an accomplished potter and brings an experience sufficiently associated with existing industrial methods to approach the matter in entirely practical ways, realising that we must work through a knowledge of present conditions and not in too detached and abstract a manner. We shall not achieve much by wholesale rejection of industrial methods; rather, with a larger apprehension of its needs and working through them and with them to better results, we shall do much more.

What, then, is the influence which such a school is bringing to bear on industry and the crafts? It appears to us that it must penetrate industry with more efficiency as the pupils trained in a better appreciation are absorbed into it. It is bound to do so if it has something better to offer. We are not inclined to believe that there is any unreasonable resistance to be found in industry itself, and the manufacturer who is sometimes misjudged, is not unwilling to be helped, when it is considered mutually. But this is not all: the better understanding of materials and the best use to be made of them, the fitness of design to purpose, combined with the freedom allowed to the student to develop his own nature, is fitting the best of them to work independently. Students who have been trained in this school have established their own independent practice in one or other of the crafts, such as pottery or bookbinding, forming on a small scale their own industry, and are assisting to spread local industries throughout the country. This is almost of national importance when the revival of village life and the decentralisation of industry is so desirable.

We were much interested, as showing the intimate nature and intelligence guiding the instruction, to learn that the student of pottery is encouraged, where available, to bring samples of clay or other material from the locality in which he lives that experiments may be made with it. We understand that one old student is at the present time carrying on successfully a pottery in a country district on the experience gained in this way of the local material when experimented with in the schools.

The exhibition was representative of the different classes and varying ages of the students, and it was surprising to notice the efficiency of the results even in one term of work. In the class devoted to costume making, some of the drawings were clever and graceful, though others showed their skilfulness in less agreeable ways. An announcement told us of work devoted to "commercial design, stained glass work, &c.," but it should be remembered that there is only design, and that rightly informed it is all of one nature, otherwise we are in danger of arbitrary distinctions, such as that which would differentiate "ecclesiastical" art from other art. Examples of embroidery shown were not very successful in colour. A very attractive part of the exhibition was that devoted to nature studies; examples of flower, leaf and seed cases were exhibited, very creditable to the students. In the second year Junior Art Course studies of bird life were equally commendable. In thinking of the usefulness of such studies, it will have been noticed how often the best work done in pottery is seen where the design and form are founded on the direct inspiration of nature, so noticeable in the most successful pottery executed by the Martin Brothers. The value of such nature study is that is intervenes to prevent the student from absorbing too early merely derivative and more standardised ways of ornament, which impoverishes so much of the work done.

It is almost invidious to call attention to particular examples, when the general level of the work was so praiseworthy. But in the Junior Art Course for plaster work the little figure of a girl with instrument, by B. Hodgkinson, had all the freedom and ingenuousness that we associate with Gothic work. That this spirit should be preserved through the further stages of the training so that it reaches the building unimpaired must be the desire of all who have had to see how difficult it is to preserve a spirit so unsophisticated and natural. In this school the craft practise is so thorough that in the pottery classes the students mix their own glazes and study the properties of materials, becoming acquainted with every stage of the craft; nor does this need a very lengthened training to acquire. We were interested to hear this view emphasised by the Principal, because it is putting the emphasis in the right place. Much exaggeration of view has gone to the subject of craft training, in which really there is very little mystery. The mystery is in the art. We can train craftsmen pretty quickly, and these schools are doing so, but we cannot make artists, and the artist knows that the exaggeration of the difficulties of the former obscures the real issues, suggesting that to be the end which is only the means. The arts only permeate life and flourish when that is sound and pure. Craftsmanship is the threshold not the goal. The problem would be a relatively small one were we only concerned with the latter, though it is most satisfactory to see that the training in craftsmanship is on sound lines, as at this school. The darkness is lifting from this era of industrialism and there is reason to believe that we have left the worst of it behind.

COLOUR IN ITALIAN ARCHITECTURE

IN a recent lecture at the Central Schoo of Arts and Crafts, Sir Banister Fletcher, F.R.I.B.A., continued the study of Gothic architecture in Italy, this time in the central and southern parts of that country. The Gothic spirit, he said, did not appeal to these southern artists, who retained the rectangular effect of classic architecture, and indulged in bright splashes of colour in the façades, obtained by the use of brightly-contrasted marbles. In Rome, basilican churches were sufficient, and S. Maria sopra Minerva was the only Gothic church in the Eternal City. In Florence, however, a new monument arose in the Cathedral dedicated to S. Maria del Fiere, with its slender and beautiful Giotto's Lily Tower, beloved of all great writers on art, and its baptistry with its bronze gates—all vividly shown by the aid of lantern slides. More purely Romanesque in tradition was the austere pile of S. Francesco and its monastic buildings at Assisi, built by the friars on the death of the noble S. Francis, their founder, the greatest and yet the humblest son of that Italian town. This pile formed one of the most monumental monastic groups in Italy and an outward sign of a devoted life.

Wellingborough School Memorial.

The Bishop of Peterborough visited Wellingborough School recently to dedicate the war memorial. The memorial, erected by past and present Wellinburians, has been designed by Mr. Talbot Brown, of Wellingborough, and carried out by local craftsmen. The memorial is completed by an east window, depicting St. Michael, St. George, St. Joan of Arc, St. Martin of Tours, and St. Alban, the work of Mr. F. C. Eden.

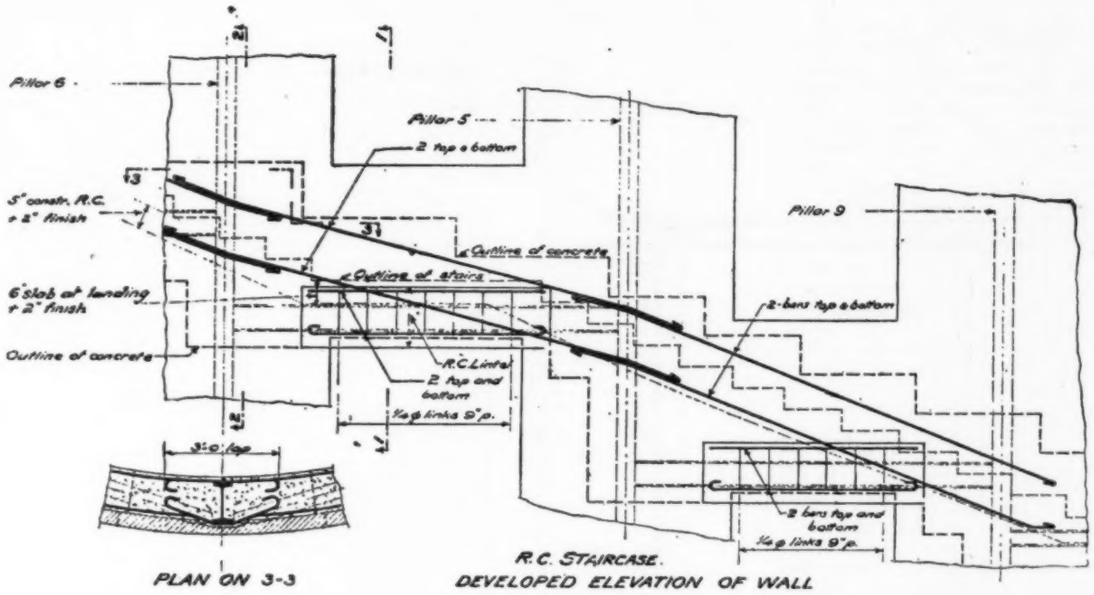


FIG. 4.

REMODELLING OF ST. JAMES' PARK STATION

THE remodelling of St. James' Park Station with a block of offices over to form an extension of the present offices, presented some interesting problems to the architects, engineer, and builders employed on the work. The first procedure was the making of an accurate survey in order to set out the steel frame building, which had to follow the curve of the tracks.

The removal of the station roof and the erecting of eighteen 20-ton girders of 53 ft. span to carry the new building over the existing station was the first problem to be considered. No interference with the traffic was allowed, and platforms of not less than 10 ft. had also to be kept clear. The platforms were of hollow construction, and it was found necessary to cut holes through to the concrete below and to insert short lengths of 12 × 12 baulk timbers to finish ½ in. above the platform level. These short lengths carried the cill of a very strong braced gantry the full length of the station, the head of the gantry being kept some 6 in. below the level of the new girders. Across the whole width of the station rolled steel joists 24 × 7½ were placed about 8 ft. apart, bearing on the wood gantry at each end. These girders were erected in two nights by a crane working on the railway. A heavy deck of 3-in. timber covered in the whole of the station, and over the platforms a corrugated iron roof was placed under this deck to protect passengers. Arrangements had to be made to preserve this iron roof until the completion of the building. This temporary arrangement enabled the existing roof to be taken down, oxy-acetylene being used to cut it down in sections.

After the old roof and parapet had been taken away the top of the brick piers were cut away and a reinforced concrete pad 3 ft. thick was constructed in one piece over the brick piers and the reinforced concrete enclosure, spreading the load from the main steel girder to the brick core as well as the reinforced concrete strengthening. This was done by a novel method of reinforced concrete enclosure to the piers, extending down to the footers and spread in the form of an inverted mushroom to obtain the necessary foundation area, both to support the new building and to take the earth pressure. This concrete enclosure covered three sides of the brick pier in the shape of a "U" on plan, and the bars of the "U" were secured by steel rods with three holes through the brick pier (see Fig. 1). Tests were carried out on the old bricks forming the retaining wall and the results obtained were interesting in that the perforated brick showed a higher crushing strain than the ordinary stocks.

Access to the building site was only obtained by a gap 5 ft. wide between two buildings, the girders being 4 ft. 6 in. deep.

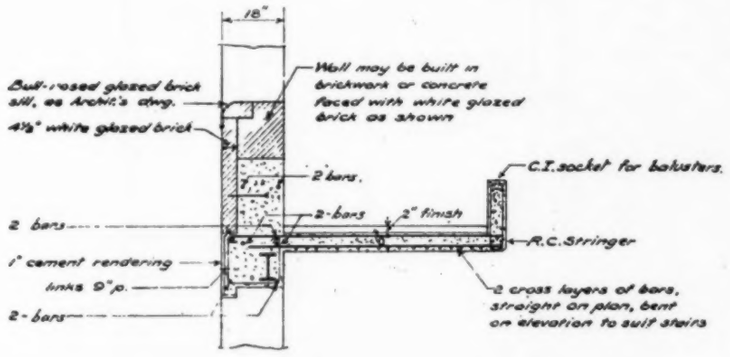

18"
Wall may be built in brickwork or concrete faced with white glazed brick as shown
Buff-glazed glazed brick sill, as Archit's dtng.
4½" white glazed brick
2 bars.
C.I. socket for balusters.
2 bars
2-bars
2" finish
R.C. Stringer
1" cement rendering
links 9" p.
2-bars
2 cross layers of bars, straight on plan, bent on elevation to suit stairs
SECTION 1-1

FIG. 5.

The method of placing these big girders in position was to place railway metals on top of the 24 × 7½ R.S.J. and directly over the gantry below, small trucks being used to carry the girders, and hand-winches with steel rope and pulley dragged the girders to their positions without placing any lifting pole or crane in the station; hydraulic jacks were used to up-end the girders on reaching their positions, packing pieces being

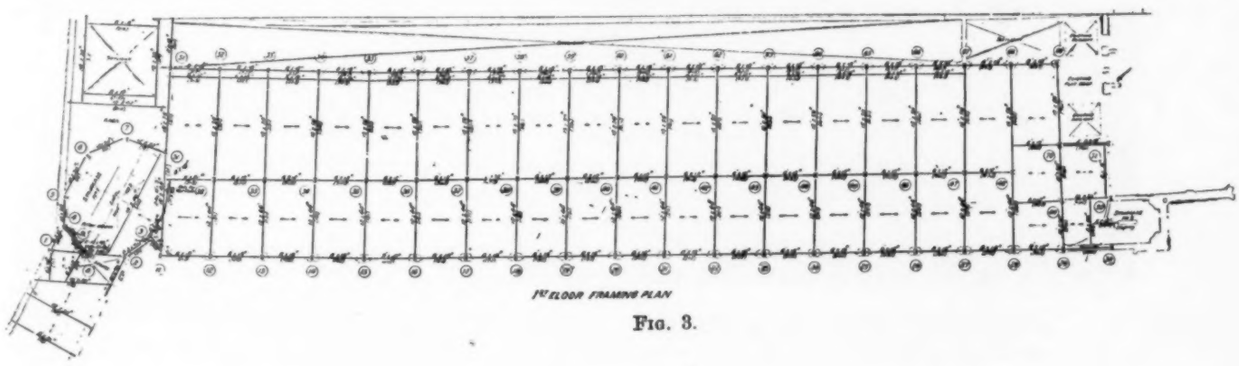


FIG. 3.

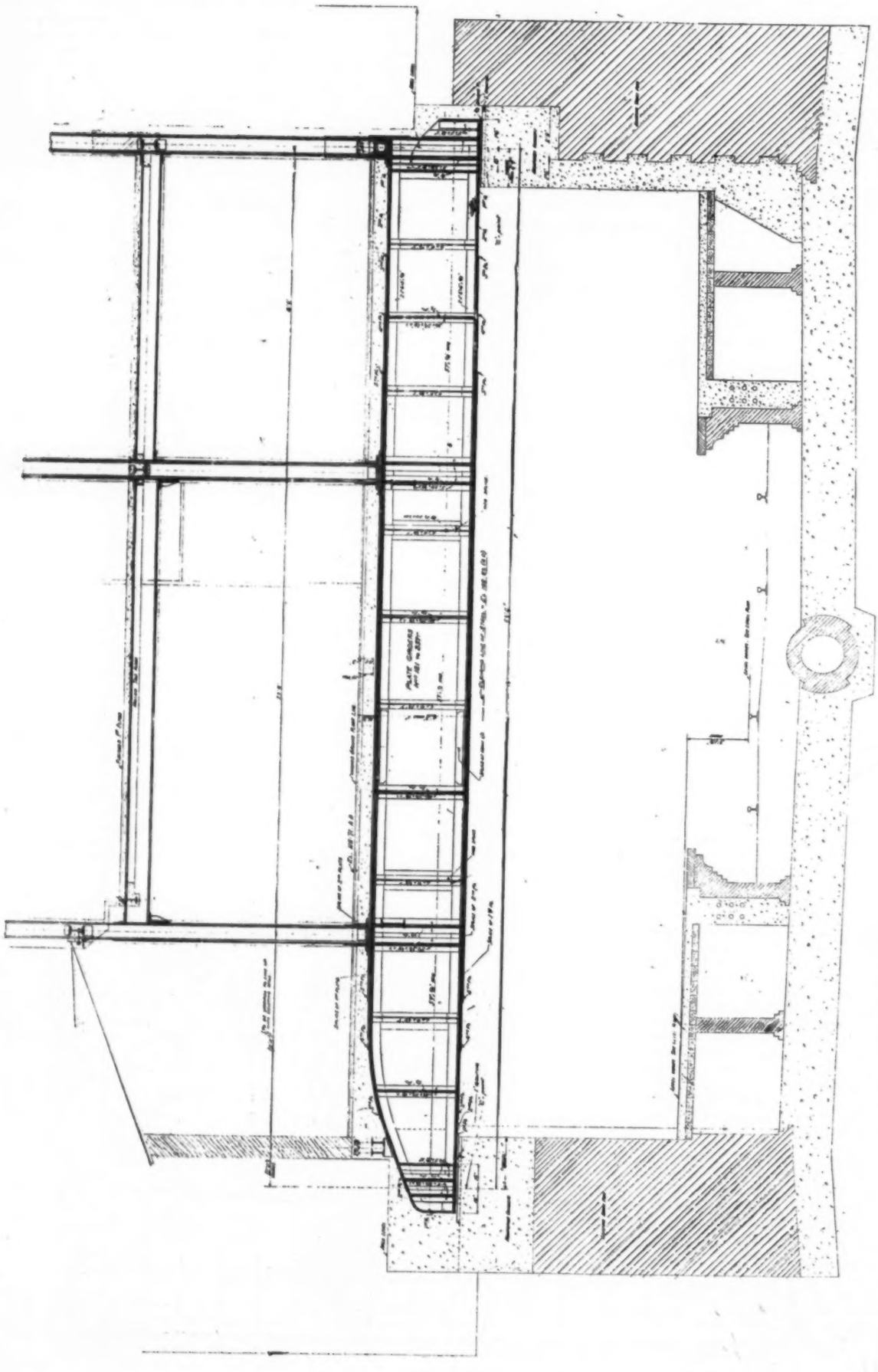


FIG. 2.—Remodelling of St. James' Park Station. MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects.

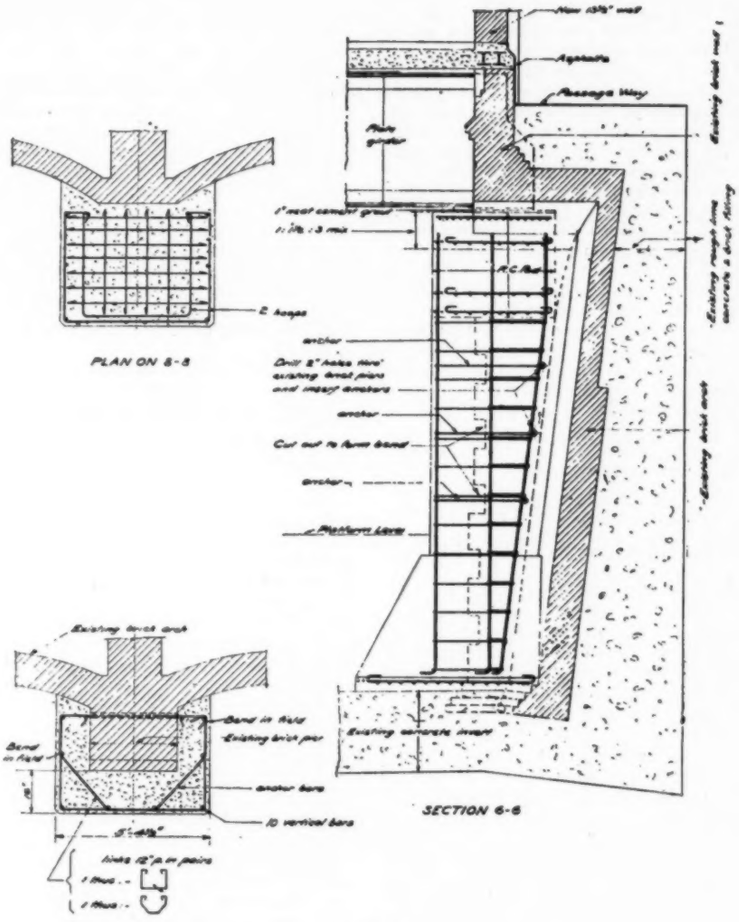


FIG. 1.

placed on the bearing plates and gradually removed and so lowered into position, one bay of the temporary deck being removed over-night. A temporary boarded floor fixed between the lower flanges of the large girders served as a working platform for riveting the steel and the construction of the strong steel and concrete floor forming the ground floor to the new offices. This temporary floor also protected the railway station below.

All the steelwork was manufactured complete in the shops at Middlesbrough by Messrs. Dorman Long & Co., Limited, and taken by rail to London and by special motor lorry from the railway station to the site of the building, and placed on a vacant plot of ground at the back of the building. The bottom flanges of the girders are only some 15 in. above the trains running below. The curved end of the main girders was necessary to get below the area level on the south side (Fig. 2). Dimensions to every important point were agreed on the plan from a straight base line from a fixed point on this line, and dimensions from this base line to locate the points by dimension, all at 90 degs. angle with one another. This applied to the C-points (centre or cross points) at piers. The centres of pillars were similarly dimensioned and, in addition, the distance, c to c, of pillars adjoining were given, which dimensions were afterwards used for the details of the steelwork. By this method the steel could be manufactured before the piers were constructed, and before centres could be set out on the site for the steelwork, and some three months' time was thereby saved in the time of construction of the superstructure, and particularly the manufacture of the main girders.

The planning of the new building so as to join up with the existing block of offices at one end, and with a small block of offices at the Palmer-street end, also presented some difficulties, and exact levels were essential.

The new elliptical staircase forms the junction between the old and new buildings, and accommodates the varying levels, as well as presenting a symmetrical appearance from the entrance hall.

Fig. 3 shows a typical framing plan of the upper floors and Figs. 4 and 5 show the special design of the elliptical staircase, the steps and landings being carried on the cantilever principle from the external walls, which are also elliptical. This stair provides a flowing soffit. The stringers stiffen the construction, but are not required to act as beams.

For lightness, hollow tile floors, with rods, were selected, the work being carried out by Messrs. Diespeker & Co., Limited. A concrete mixer with tower elevator on the American principle was used on an adjoining site, and the concrete fed by means of shutes on to site, the one disadvantage in the use of this feed being that the concrete delivered over a long distance became rather uneven in quality, and eventually this was abandoned and the concrete was taken in skips on rails to destination.

The lifts were installed by Messrs. Waygood-Otis, and are directly over the railway station. A heavy rolled steel joist bottom to the lift pit was constructed, bearing on the bottom flanges of the 4 ft. 6 in. girders; various safety devices were gone into as a precaution against the lifts breaking through into the station below, but the only additional precaution taken was to put safety gear to the balance weights.

Lift fronts were carried out by Messrs. Caston. The heating was carried out by Messrs Rosser & Russell. A new boiler-house has been built and equipped to heat the old and new buildings in the basement, access being obtained from the platform, the long horizontal runs necessitating the use of pumps to maintain efficient circulation. The tiles were supplied and fixed by Messrs. Van Straaten.

The entrance hall was enlarged by the removal of the old lift staircase, and has been panelled in English oak to form a war memorial to those men belonging to the railway company who lost their lives in the war. Some 1,400 names are inscribed on the oak panels. The panelling and marble work were carried out from the architects' designs by Messrs. Roberson, of Knightsbridge. The architects were Messrs. Richardson & Gill; consulting engineer, Mr. S. B. Bylander; contractors, Messrs. Huntington, Ltd.

Entrance to Offices, St. James' Park Station.
MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects.

THE LONDON SOCIETY

On November 14 Dr. Septimus Sunderland lectured before the London Society on "The Spas of Old London and its Vicinity." The chairman, Mr. Carmichael Thomas, in introducing Dr. Sunderland, said he was a great authority on a subject which would appeal to every member of the London Society. Although their activities dealt with the future, it was desirable they should know something of Old London.

Dr. Sunderland, in the course of his remarks, said springs abounded not only on the north side of the river, but also in Southwark, Lambeth and contiguous neighbourhoods. As time went on, and as buildings were gradually erected over the outskirts of the old city, imperfect drainage and the construction of cesspools interfered with the purity of the springs and wells, many of which were gradually obliterated. The word "spa" was derived from a Walloon word, "espa," meaning "fountain," and took its origin from the town of Spa in Flanders, lying about sixteen miles south-west of Liege, very near the German frontier.

He would first call their attention to a little group of spas and spurious spas, to the number of eight, which existed in a small area, not one of them being more than a mile distant from the present King's Cross. These were: St. Chad's Well, King's Cross; Pancras Well, Bagnigge Well, Powis Spring (Great Ormond-street), and Islington Spa. The following he considered spurious: Sadler's Wells, Islington; London Spa; New Wells (Clerkenwell).

St. Chad's Well, in London, was situated opposite the present King's Cross. Pancras, or Pancridge Wells, flourished for a period of about 100 years from 1697, with intervals of comparative disuse, and were surrounded by a beautiful garden near the old church of St. Pancras. Bagnigge Wells were situated in Bagnigge Wells-road (now King's Cross-road), near the Fleet River. Islington Spa occupied part of the site of the present small public gardens (opened in 1895) known as Spa Green, Islington. Sadler's Wells (named from the man Sadler, who in the latter half of the seventeenth century established a music house in that part of Clerkenwell, afterwards for some time known as Sadler's Hollow, bounded on one side by the New River Head, near the present Rosebery-avenue), had some claim to have been a "Holy Well," used by the monks of St. John's Priory, Clerkenwell, before the Reformation. At anyrate, Sadler, digging in his garden, in 1683, came upon a flat stone covering a carved stone well of ancient date, which was found to contain a mild chalybeate water, and was considered to be the Holy Well referred to. He exploited this discovery and soon the public flocked in hundreds to imbibe the water with "capillaire" (a syrup flavoured with orange flower water), at 6d. the glass, or a guinea for a season's potations. Hampstead Spa enjoyed great popularity in the eighteenth century.

At Kilburn and Marylebone also there were spas and at Acton Wells, East Acton, about five miles from the Marble Arch, there was a spa fashionable during Queen Anne's reign. Several springs and wells, south of the Thames, near London, achieved a reputation in the eighteenth century, when there seemed to be a veritable craze for the foundation of spas. The first three he considered spurious—Bermondsey, Finch's Grotto Gardens, restoration of Spring Gardens—but St. George's Spa and Lambeth Wells were genuine. St. George's Spa, first mentioned in 1695, was situated about half a mile from Lambeth Wells in the grounds of the Dog and Duck Tavern, near some pools in the marshy lane of St. George's Fields. Lambeth Wells must be considered a genuine spa. Its two springs of mineral waters, situated in Three Coney-walk—now the crowded Lambeth-walk—near Lambeth Palace, were discovered late in the seventeenth century. A house was built over these wells and surmounted by a gilded ball. The usual amusements were inaugurated. The water was supplied to the neighbouring St. Thomas's Hospital and to other purchasers at a penny per quart, its chief use being for relief of affections of the liver and stomach. To the south of the river and more to the west, there were four spas whose waters had a great reputation, namely, Dulwich Wells, Sydenham Wells, Beulah Spa, and Streatham Spa. These were really country spas near London in the days when they flourished.

Beulah Spa, the last of the springs in the environs of London to be inaugurated as a spa, was the name given to the mineral spring at Upper Norwood, known to the residents of the surrounding districts in the latter part of the seventeenth century. Streatham Spa was one of the most important of the London spas. The existing Streatham Well is probably the only one of the medicinal springs of the environs of London where the water still remains uncontaminated and can be drunk with beneficial effect at the present day.

SOME ENGLISH CATHEDRALS AND STONE DECAY

Professor A. P. Laurie recently lectured to the students of the Royal Academy of Arts, Burlington House, on this subject. In the course of his remarks he said that for some years he had been making observations at the request of the Office of Works on the stone decay taking place in their ancient monuments. During this time he had collected a good deal of interesting information, and during the last summer he determined to visit some of their cathedrals with a view to collecting further facts. The cathedrals visited were Durham, Lincoln, Ely and Norwich, and in addition he re-examined the condition of the stone at Hampton Court and the Houses of Parliament, and paid a visit to Westminster Abbey.

Before speaking of these buildings he would refer to the ruins of Elgin Cathedral. In order to understand what was happening here and elsewhere it was necessary to classify the stones for building into three main groups:—The lime-stones, the sand-stones in which the quartz particles were united by calcite, and the sand-stones in which the particles were united by silica. This classification would be regarded by petrologists as wanting in detail and being somewhat diagrammatic in character, but it would be the most convenient for their present purpose, which was the injury caused to modern buildings by the presence of sulphur dioxide in the air produced by the burning of coal. The ordinary causes of stone decay did not require special mention, as they were well known to architects and builders; but the new and the main cause of the rapid decay taking place in modern buildings was the attack on the calcium carbonate of the lime-stone and of the calcite forming the binding material in sand-stones by sulphur dioxide in presence of air and moisture forming calcium sulphate. Calcium sulphate was slightly soluble in water, and therefore was being slowly dissolved in the rain and removed; but this was not the most serious cause of damage. Cases of rapid decay were found to be associated with the crystallisation of calcium sulphate inside the stone and the consequent breaking up of the stone. The lecturer showed micro-photographs of calcium sulphate crystals and magnesium sulphate crystals from Ely and from the Houses of Parliament respectively, and described experiments for producing the same effect in the laboratory.

Proceeding then to deal in detail with the stone decay taking place at Elgin, Durham, Lincoln and Ely, he directed the attention to the fact that in some cases where siliceous sand-stones had been used the source of lime must have been the mortar, the rain dissolving and washing the lime into the stone. He also showed from the analyses at remote places like Ely and Tintern Abbey that the destruction owing to sulphur dioxide was not confined to the towns, but was spread over the remote country districts. Finally he stated, as the result of the evidence collected, that probably the best thing that could be done would be to treat such stone surfaces with a binding material depositing silica cement, and periodically to wash down the building with water during the summer with a view to removing the excess of sulphate of lime and thus diminish the danger of crystallisation. While it was not possible in the state of their present knowledge to say whether such washing could be safely applied to every variety of lime-stone, experiments in this direction were well worthy, in his opinion, of the serious consideration of architects.

THE DEVELOPMENT OF BUILT-UP AREAS

Mr. William Haywood, F.R.I.B.A., in his sixth town-planning lecture at Birmingham University, on this subject, said the method of procedure usually adopted in respect to improvements in the built-up areas of English towns was so devised that negotiations for affected property and land might proceed with as little interference as possible from unscrupulous action by speculators in land values. In those areas of boroughs which were not yet built upon, however, this policy had been replaced by a procedure under the Town-planning Acts, which protected the community against such speculation; and it was now evident that built-up areas also should be brought within the Town-planning Acts, and be given freedom in planning under the protection of a reasonable court of appeal against attempted exploitation. Meanwhile, until this or some similar protection was afforded, they lacked the stimulating influence of public opinion on this most important and urgent phase of town-planning activity; since schemes for the revision of their congested areas were usually far advanced towards adoption before the public was advised of them.

English methods differed materially from American practice, which relied on popular demand before official action was taken; and where the bugbear of exploitation was avoided before the adoption of a scheme, by the absence of official approval, and was adjusted subsequently, by some form of betterment levy against benefited property, or by the assessment of a legal tribunal. With respect to Birmingham, the report of the "Housing Enquiry Committee," published in October, 1914, recommended that a plan for developing the central area of the city be put in hand immediately; and the responsible City Departments had been working at such a plan ever since; although for the reason already given, their work had not yet been made public.

In the comprehensive arterial road scheme put forward by the Public Works Department and adopted by the city in 1917, they had the essential skeleton of their future town plan, with the exception of a small central area. This area was shown on the map illustrating the scheme, but was not included in the project for which special powers were then obtained. It was chiefly by the conditions in and about this centre that Birmingham, with nearly 1,000,000 inhabitants, and a world-wide reputation for municipal vigour, had been known and found wanting in character. And it was by the class of development in this portion of the town that their capacity to rise above an indifferent provincialism in architectural expression would be judged by future generations.

Devon Road Scheme.

The Devon County Council will, it is stated, shortly begin work on a road reconstruction and improvement scheme to cost over £1,250,000. About 120 miles of road, out of a total of 1,400 in the county, will be dealt with, and the work will occupy a period of five years.

ARCHITECTS' AND BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers but cannot accept responsibility for contributed replies, especially on legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or better still, in typescript!—ED.

Timber Markings.

SIR,—Would any of your readers be kind enough to let us know the most reliable post-war list of "timber markings"?

G. BAINES & SON.

Old Beams.

[An inquirer asks where he can get useful information on cleaning old beams and the panelling of paint and the methods of restoring them.]

Covering Power of Enamel.

[REPLY TO "DECORATOR," NOVEMBER 14.]

SIR,—Applied full, eighty yards super; stretched out, up to one hundred yards super. For estimating requirements, reckon ninety yards to the gallon, as no two painters lay the same quantity on a given surface, some laying fuller than others, and *vice versâ*.

JOHN M. FIFE.

SIR,—A good enamel on wood should cover about 70 to 80 yards super, or up to 100 yards super on an undercoat of similar tone. The covering power varies, however, with the quality of the enamel used and the skill with which it is applied.

"EFFICIENCY."

Brick Footings.

[REPLY TO PROVINCIAL, NOVEMBER 14.]

SIR,—Your correspondent, "Provincial," can be assured that the District Surveyor will require brick footings to all walls; if it were not so, the last clause in Section 87, London Building Act, 1894, would not have been inserted. Every wall must have proper footings projecting as described. I did not always find it easy, but I always got it done.

HENRY LOVEGROVE.

SIR,—The District Surveyor has no discretionary power under the L.B.A., and can only administer that Act as it stands. In modern building in London the section dealing with brick footings is honoured more in the breach than the observance, but in all cases the consent of the L.C.C. must first be obtained. The application should be addressed to the Superintending Architect of the L.C.C., at the County Hall, and on foolscap paper. The section of the Act concerned in the application must be stated, and the reasons for which the application is made and the grounds under which the exception is considered reasonable. The application should be accompanied by drawings on linen and in duplicate, both of which will be retained. There should be no difficulty in obtaining consent in the case quoted by your corrrespondent.

"LONDONER."

Running Cost of Electric Lifts.

[REPLY TO "STATISTIC," NOVEMBER 14.]

SIR,—Assuming an average of 250 fully-loaded journeys a day, the probable running cost of a lift for six on a travel of 50 ft. would be in the neighbourhood of £20 to £25 per year for current at 2½d. per B.T.U., and to this must be added wages of lift attendant—say £100 per year—and repairs, an amount almost negligible for the first year or two, but an increasing amount with the age of the lift.

"EXCELSIOR."

Thatching.

SIR,—I should be glad to be advised what is the best method of treating the eaves spouting in a thatched building. I believe in most old thatched cottages the rain-water was allowed to drip from the wide-spreading eaves, clear of the building, but now this will hardly do, although the ordinary rain-water casting is likely to look very thin and incongruous.

"OLD-FASHIONED."

Damp Walls.

SIR,—I would be pleased if you or any of your readers could suggest a remedy for damp house walls. The house faces east and the walls which are most troublesome form the corner near the fireplace in the front room on the ground floor. The damp wall is part of the frontage, *i.e.*, from the bay window to the wall of the adjoining house and also the inner wall which forms the partition wall between the two houses.

Under the room in question, there is an open cellar in which there are no signs of much dampness, and there is a constant ventilation through the gratings. I have tried removing the old plaster and having it replastered and coated with special dressings said to prevent dampness; however, within a few weeks the new paper was as wet as ever, and all its colouring destroyed. Any suggestion will be appreciated.

"HOUSEHOLDER."

Hollow Walls.

[REPLY TO "CAVITY," NOVEMBER 14.]

SIR,—The answer to the query by "Cavity" is probably that the wall was carelessly built, and that mortar droppings were allowed to lodge on the iron ties; the mortar thus acts as a bridge and conducts the moisture through the wall where the ties exist.

"MORTAR."

SIR,—The most probable solution to the mystery of the damp spots in the wall described by your correspondent is that the inner and outer shells of the wall being in courses of differing depth, some of the metal ties have been built in sloping slightly inwards, and so have conveyed the moisture from without, into the inner shell. It will be a difficult matter to cure, and some treatment whereby the inner face of the wall is sealed, or the outer face rendered, will have to be devised. The fact that there are entire rows of wall ties where the trouble has not occurred goes to confirm the above probable cause.

"LEVEL."

The Therm.

[REPLY TO "CONSUMER," NOVEMBER 14.]

SIR,—The therm is a unit of heating power. It is the equivalent of 100,000 B.T.U's (British Thermal Units), and one of the latter is the amount of heat required to increase the temperature of 1 lb. of water 1 deg. Fahr.

This new method of computing the charge for gas consumption is an overdue corollary to the introduction of incandescent mantels in the use of which the consumer is more concerned with the heating power of the gas which makes the mantel incandescent, than with the candle power of the raw gas flame. The amount of gas consumed to the therm will vary with the quality thereof, and this is determined and revised from time to time as a result of tests.

In any case the consumer has the advantage of knowing that he pays only for the work done, and that it is useless for the gas to ca' canny.

"MANTEL."

[The British Commercial Gas Co. inform us the "therm" system of charge was adopted by Parliament (in The Gas Regulation Act, 1920) on the initiative of the Board of Trade, acting on the recommendations of The Fuel Research Board. The "heat unit" in this country is known as the British Thermal Unit (= 1 B.Th.U.) This is the quantity of heat required to heat 1 lb. of water 1 deg. Fahr. A "therm" is the name for 100,000 B.Th.U.s. The "therm" system of charge provides that the quantity (*i.e.*, cubic feet) consumed, as measured and recorded by the meter, multiplied by the declared calorific value of the gas in B.Th.U's, shall be the basis of payment by the consumer. Assuming the calorific value declared by a company to be 500 B.Th.U.s, this means that each cubic foot of the gas supplied by that company will develop not less than 500 British Thermal Units when burned. A "thousand cubic feet," the old basis of charge, would therefore represent at least 1,000 × 500 = 500,000 heat units (B.Th.U.s). The new basis of charge, the "therm," is the name given to 100,000 heat units, so that 1,000 cubic feet would then be charged for as 5 therms. To convert "therms" into "cubic feet" in such a case all you need do is multiply the number of therms by 200.]

(Other replies on this subject have been received.)

SHEFFIELD SOCIETY OF ARCHITECTS & SURVEYORS

MR. E. W. B. SCOTT, A.R.I.B.A., lectured recently on "American Architecture as I Saw It," at Sheffield University. In the course of his remarks he said the position of architecture in America was a peculiarly interesting one. Perhaps for the first time in history they had a wealthy and highly complex civilisation in a new country almost without a past, but possessing and venerating the traditions of past ages in other lands. As a result they found them able and willing to build extensively, selecting the best from the traditions of Europe, while themselves unhampered by any archæological dead-hand. The American cities, like ours, were full of uninspired buildings of the last century; and they were pulled down ruthlessly to be replaced by better, while their cities were extending at a rate undreamed of over here.

The five weeks he spent in the States had not left on his mind the picture the late Mr. Bertram Goodhue drew at the R.I.B.A. when he described American architecture as undisciplined, aimless, chaotic and altogether inferior. His impression was rather that an art that knew most definitely what it was about; one that, making the fullest and frankest use of the work of other ages, was working out a manner in architecture which would interpret this complex civilisation. It seemed that sincerity and singleness of aim were teaching them to use the new materials and methods and to meet the new demands of this age better than was the case anywhere else.

In America vast wealth and opportunity had helped, so, undoubtedly, had the Beaux Arts; but it was the realising new conditions and the simple faith that they ought to be met in a rational manner that was their strength. Of course, this meant experiment; they were bound to cut new tracks in many directions in this pioneer work, and much work would be in the wrong direction. The man who never made a mistake never made anything. With reference to the work of Mr. Goodhue, he was, perhaps, best known for his Gothic churches, in which he had approached nearer to the spirit of the old mediæval builders, perhaps, than any man since the Renaissance, but he ventured to say, lovely as it was, that was not the work by which he would be longest remembered. He had another mood, a mood in which he broke away from tradition and reached forward into the future; disencumbering himself of Corinthian columns and Perpendicular windows, he attempted to get right down to the bones of architecture—to begin from the needs and requirements of the particular case and build, relying for his effect on almost stark simplicity and beauty of proportion. It was, therefore, future possibilities more than present achievements that he wished to look for in his views, and this applied not only to the public buildings but also to those which he went particularly to study—industrial buildings.

THE BUILDING TRADE

THE SHORTAGE OF SKILLED LABOUR

SOME NOTES BY "ESTIMATOR."

THE present shortage of skilled labour in the building industry is due to many reasons, the chief of which are:—(1) That numbers of men have gone into other occupations during the war and at other times and have evidently found their new sphere of work more congenial; (2) shortage of apprentices or learners.

To deal with the first point: As the men have left the industry, little can be done to bring them back to it, but care should be taken to remove any disadvantages under which the trade may unnecessarily suffer, and so stop further leakage. The wages paid in the building trade are at least as high as in most other industries, yet the sight of really skilled workmen going home in the evening all dirty and dusty would hardly attract recruits to the business in these showy times. Some simple form of convenience for washing, etc., should be provided on most works.

(2) Shortage of apprentices or learners.—The shortage of apprentices is popularly supposed to be due to the trade unions attempting to limit the number of apprentices admitted to the trade and the employers not taking sufficient numbers of apprentices. The trade unions do not want them and the employers do not take them. These obstructions will no doubt disappear in due course, and the progress of accepting apprentices may be hastened if some aspects of the case are considered.

The employer in the building trade finds that now the work in each trade is so carefully defined, the number of men he employs varies considerably, and if he engaged sufficient apprentices to suit his boom times he would, as soon as the various parts of the job were brought to completion, have no work for these youths. This might be overcome by some system of passing on the apprentice to other employers during a slack time, although there are many objections to such a course, as the divided authority and control of the apprentice would affect the discipline and training of the youth. Many of the objections of employers to apprentices are due to the conduct of the apprentices themselves, so much so that employers do not want to be bothered with them. In the case of boys leaving an elementary school and going direct to, say, a joiner's shop, they can only be given very elementary processes to do, and probably fill in their time making glue, or similar jobs, so that the course of training seems monotonous. The monotony of the training and the natural hostility to control sometimes leads the boy to kick over the traces, to the annoyance of the foreman or employer. The foreman objects to the boy and the boy objects to the foreman. Both youth and employer grow ill weeds. It is in the early years of the apprenticeship period that so many failures occur. This may be obviated by the trades concerned insisting on the proposed apprentice taking a two or three years' course of manual training in the workshop of one of the schools of building, which would ensure the lad having been under control during some of the susceptible years, and being well grounded in the elementary parts of the work and ready to use the tools, and fit to receive and benefit by any opportunity of working in his trade.

The other type of learner is one who drifts into the trade as an errand boy or general assistant, and takes every opportunity of using the tools and learning the trade, and many of our best craftsmen develop in this way. Such a boy must be civil, diligent and obliging, and on good terms with everyone, so as to get opportunities of advancement as they occur. The latter considerations, unfortunately, sometimes do not appeal to apprentices.

The weakness of the present phase of the apprenticeship question is that immediately the lad has "served his time" and is reinforced by a trade-union ticket, he may ask the full standard rate of pay and get it, at any rate in boom times.

It is not good for the industry for youths, immediately they have passed through some period of training, to be allowed to pass as full-blown mechanics, and secure the same rate of pay as an expert craftsman. Both employers and trade unionists should arrange some system of grading by which wages should be paid in accordance with the degree of skill exhibited, and it is only by some such agreement that it will be worth a man's while to become a highly skilled tradesman to equal the craftsmen of previous generations.

Will the present "workers' paradise" long continue?

BUILDERS' BENEVOLENT INSTITUTION

Annual Dinner.

THE seventy-second annual dinner of the Builders' Benevolent Institution was held on November 13, at the Hotel Victoria, the President, Mr. G. Perry Nash, F.I.O.B., presiding over a large gathering, amongst whom were Messrs. R. F. Foster, F.R.I.B.A., C. Dunch, M.S.A., F. M. May, F.I.O.B., J. W. Chessum, J.P., B.B.I., Major R. J. Holliday, M.C., F.I.O.B., B.B.I., J. M. Theobald, F.S.I., H. T. Holloway, F.I.O.B., P. L.M.B.A., T. S. Darbyshire, A.R.I.B.A., H. Tanner, F.R.I.B.A., W. Woodward, F.R.I.B.A., J. E. Drower, C.B.E., H. D. Searles-Wood, F.R.I.B.A., H. Austen Hall, F.R.I.B.A., F. Wheeler, F.R.I.B.A., F. Higgs, F.I.O.B., P.P. B.B.I., R. B. Brown, F.S.I., Dudley Bartlett, F.I.O.B., C. C. Trollope, F. G. Minter, F.I.O.B., S. G. Nash, A.I.O.B., W. Aumonier, Major Harold Bailey, F.R.I.B.A., F. W. Stratton, F.I.O.B., E. J. Reed, F.S.I., Guy Church, F.R.I.B.A., G. Grey Wornum, F.R.I.B.A., John T. Bolding, Major Troup, A. B. Falkner, F.I.O.B., R. H. Hellyer, A. H. Adamson, F.I.O.B., Andrew Mather, M.S.A., Thomas Thorne, F.I.O.B., L. Withrington, A.I.O.B., L. L. Withrington, A.M.I.E., G. S. Roberts, F.I.O.B., G. H. Parker, F.I.O.B., A. Smithers, F.R.I.B.A., J. J. Clark, A.R.I.B.A., Capt. Frank R. Shurmur, and Fred Thorne, J.P., F.I.O.B.

After the usual loyal toasts had been honoured, Mr. H. T. Holloway, in proposing the "Builders' Benevolent Institution and its President," said grave risks were attached to the building calling. A large number of their members fell on bad times, and it was to relieve their distresses that the Institution existed. It had now been established 72 years, and it was run mainly by a self-sacrificing committee who sat once a month at 48, Bedford-square. With reference to the recent strike Mr. Holloway said after seven weeks bitter struggle without precedent, they had, he thought, fixed up a peace which was not only eminently satisfactory, but would, he thought, be honoured by both sides. He hoped that wages were firmly stabilised until January, 1926, and he would suggest that the workmen were satisfied with the increase in London, and were settling down to work with a will. They were pleased with the way they had been treated. There was still grave trouble, however, the gravest being the shortage of skilled men, and that the employers hoped to tackle, and were tackling now. They hoped to get co-operation from the Trade Unions. Considerable modification had been made with regard to apprentices and he hoped the builders would take it seriously to heart. If the builders would only take on suitable candidates the industry would get rid of the throttle hold. A happy feature in front of them seemed to be what looked like plenty of work ahead.

The President, in responding, said with regard to the activities of the Institution, he would draw their attention to the good work which had been carried on for over seventy years. Assistance had been rendered to hundreds of homes during that period; they were carrying on with increased energy and usefulness. He would remind them that the object of the Institution was to give temporary relief and grant pensions to necessitous masters and their widows where necessary. They had forty-six pensioners, and in addition had been able to grant a gift of £5 at Christmas and Midsummer to each pensioner. During the past year the committee had decided to extend the scope of the Institution. At their last meeting it was decided to include master bricklayers and plasterers. It was, therefore, very necessary they should secure increased support.

Major R. J. Holliday, in proposing the "Architects and Surveyors," said he was convinced that it was fully realised that architecture was the greatest of the arts. It was the responsibility of architects to guide public taste, to solve the many problems which occurred, and to maintain a high standard of dignity. No other profession had a higher standard of integrity and commercial honour than the architectural and surveying professions. A high standard of quality was demanded from them, and the manner in which the profession carried out its duties was generally appreciated. Had they fully appreciated, however, the difference between the art of architecture and the other arts? Many artists worked in the seclusion of the studio, and if dissatisfied could destroy their work. It was not so with the architect, however. Finally, he would urge a closer friendship between the architect and surveyor and the general contractor.

Mr. Henry Tanner, in responding, said if there was one subject on which they should agree it was the subject of the Benevolent Institution. Major Holliday had asked for closer co-operation between the architect, the surveyor, and the contractor. He would suggest, however, that the architect always tried to do his best for the contractor. They all wished to put up good buildings and to get credit from their clients and the world in general. The builders had to put up the building for the architect, and on behalf of the architects he thanked them.

Mr. J. E. Drower also responded and said they appreciated the troubles of the building contractor. There seemed a continual fight with labour, and the building contractor's life was one long struggle against circumstances. There was always the millstone of labour trouble. He would suggest that the Builders' Benevolent Institution was the "Good Red Cross" which bound up the wounds of those who fell by the way.

Mr. A. H. Adamson, in proposing the toast of "The Vice-Presidents, Trustees, Committee and Stewards, coupled with Mr. John T. Bolding," said they had to thank the Vice-Presidents for putting the finances of the Institution on a sound basis. Little work would be given their trustees if they responded to the present appeal. The Institution was run on economical lines, and a visit was made to the home of each applicant. The builder's lot was a hard one, and they greatly appreciated the help given by the architects and surveyors. He would pay special tribute to Mr. J. T. Bolding, who had been connected with the Institution for fifty-five years. If they all worked together for the good of the building industry, which was one of the most important in the country, it would be for the good of the industry as a whole. Apart from the problem of the shortage of labour, they had the question of the importation of foreign material—bricks, tiles, slates, &c.

Mr. J. T. Bolding, in responding, said the Vice-Presidents were the main feature of the Institution. They had no idea, however, of the trouble which was taken by the trustees, and if they attended one of their monthly meetings they would be surprised.

The President then announced that the total amount which had been collected amounted to £1,646 19s. 6d.

Mr. Carter, in proposing "The Visitors," said the Institution could not go on if it were not for those who came year after year. Mr. J. M. Theobald responded, congratulating the Institution on the result of the appeal.

SPECIFIC PERFORMANCE

Preliminary Contract.

IN these days of house shortage the would-be buyer of a house often finds himself in some difficulty; having found a house which he thinks may suit him he is anxious to close the bargain immediately, but caution tells him not to bind himself definitely on a preliminary inspection and without further inquiries, and as a result the preliminary contract, whether formal or informal, is rarely a definite contract on which specific performance will be decreed.

A recent case—Lockett *v.* Norman-Wright—affords an example of this difficulty, although in this instance it was the buyer who broke off negotiations. The plaintiff was the lessee of three floors in a house in Park-street and in two interviews with the defendant he had expressed willingness to let the third and fourth floors to the latter for a term of eight years at a rent of £300 per annum, the plaintiff to execute certain alterations and works. On February 26, 1924, the defendant, over the telephone, told the plaintiff that he would take the flat and on the following day the plaintiff received a letter from the defendant "Confirming my conversation over the telephone this afternoon, subject to suitable agreements being arranged between your solicitor and mine and subject to your carrying out the decorations of the top flat at your house in Park-street. . . . I am prepared to take the flat for a period of eight years at an inclusive rent of £300 per annum, including all rates and taxes, &c. . . . My solicitor is ——, with whom I should be glad if your solicitors would communicate regarding the agreement." On the same day the letter was received the plaintiff acknowledged it, saying he had sent it to his solicitors and he was applying for permission to make the necessary alterations.

The matter was taken up by the parties' solicitors and on March 31 a draft lease had been agreed between them the term to begin to run from March 25. To this draft the plaintiff's solicitors had appended a note that if the premises were not ready for occupation and use by March 25, the landlord would hand over a letter stating that the rent was not to run until they were so ready, and the defendant's solicitors had noted they observed the note and "it is, of course, agreed that the alterations arranged must be carried out to the tenant's reasonable satisfaction." On April 11 the defendant refused to go on with the transaction. The case is only reported at present shortly and the grounds for this refusal are not stated, but the plaintiff brought the action for specific performance basing his claim (1) on an agreement constituted by verbal message on the telephone and the defendant's letter of the same date, and (2) alternatively an agreement by the defendant by his solicitor constituted by the said letter of February 26, the correspondence between the solicitors, and the approved draft lease with the notes thereon.

The Court held, on the authority of Rossdale *v.* Denny (1921, 1 Ch. 57; *The Builder*, November 26, 1920), Coope *v.* Ridout (1921, Ch. 291), and Chillingworth *v.* Esche (1924, 1 Ch. 97; *The Builder*, December 28, 1923), that there was no distinction between the expression used in the defendant's letter, "subject to suitable agreements being arranged between your solicitors and mine," and the expressions used in those cases, "subject to formal contract," "subject to contract," and "subject to a proper contract to be prepared by the vendor's solicitor," and thus on that head the claim failed, for it has been held there is no enforceable contract where the execution of a further contract is stipulated for, as the law does not recognise a contract to enter into a contract, and on the alternative claim the Court held that there was no evidence that the defendant's solicitors were authorised to enter into a contract on his behalf or that such authority could be implied in the circumstances of this case. On the first point, perhaps one of the strongest cases is Coope *v.* Ridout, where the original offer was made "subject to title and contract," and where the Court came to the conclusion that assuming in the plaintiff's favour that all the terms founded on the correspondence and interviews had been settled on those interviews and letters, one by one, and all those terms had been embodied in the draft, one condition had still to be fulfilled, that it should take the form of a contract made *inter partes* and formally executed. This judgment received the approval of the Court of Appeal. Where, therefore, reference is made to a future document it seems useless to apply for an order decreeing specific performance.

On the second point, however, the case seems a hard one, as the defendant in his letter had accepted the flat "subject to suitable agreements being arranged by your solicitors and mine," and the draft represented such an agreement. Yet authority was held lacking in the solicitors to contract for the defendant. The law laid down in the cases illustrates the difficulties purchasers and vendors are placed in in coming to a binding agreement on which specific performance will be granted in the early stages of the transaction, for houses cannot be purchased like some other articles on a mere inspection, but other inquiries are essential; yet, when a purchase is arranged it would certainly appear that the law should compel a completion of the bargain when either party rides off on some reason not one of the matters left open by the preliminary contract for investigation. Damages, even if they can be obtained, for breach of the contract in many, if not most cases, would not afford any real remedy. It is extremely difficult to obtain any alteration in the law relating to real property, but this question of specific performance appears by the decided cases to have been narrowed down unnecessarily and to leave either party to a purchase too long at the mercy of the other party.

Part Performance.

A case, Rawlinson *v.* Ames (*Weekly Notes*, November 15), deals with another aspect of the law on this subject and should be noted in conjunction with the case we have referred to above. In this case the defendant had entered into a verbal agreement with the plaintiff to take the lease of a flat, and as in the other case it was agreed that certain alterations were to be made in the flat, presumably by the plaintiff, but the report, which at present is only in the form of a headnote, does not specifically state that fact. During the progress of the alterations the defendant frequently visited the flat and made suggestions for further alterations which were carried out by the plaintiff at her request. The defendant subsequently repudiated the contract and the plaintiff brought this action for specific performance of the verbal agreement and the question to be decided was whether the defendant could rely upon the Statute of Frauds as a defence to the action, or whether there had been sufficient acts of part performance to take the case out of the Statute.

In order that an Act may have the effect of part performance and take a case out of the Statute, which requires a memorandum or note in writing signed by the party to be charged, the Act or Acts relied upon must unequivocally refer to the parol agreement.

The Court held that the acts of the plaintiff were referable only to such an agreement as was alleged in this case, and on the authority of Dickinson *v.* Barrow (2904, Ch. 339), the plaintiff was entitled to a decree for specific performance. That case, the effect of which the Court said was correctly expressed in the headnote in the Law Reports, closely resembled the present case. There the defendant had entered into a verbal contract for the purchase of a site from the plaintiffs, who were to erect a house upon it. During the progress of the building she had frequently visited the site and made suggestions for material alterations and improvements in the building, which were carried out by the plaintiffs at her request. Subsequently, she had repudiated the contract and the plaintiffs had brought an action for specific performance, and the headnote, which the learned Judge approved, runs, "Held, that the acts done by the plaintiffs at the request of the defendant were acts of part performance taking the case out of the Statute of Frauds and that the plaintiffs were entitled to judgment for specific performance."

RENT INCREASED FOR REPAIRS

A CASE of some interest to property owners is Biddle *v.* Morris (1924 2 K.B. 490). The appellant was the owner of a dwelling house in Birmingham the annual value of which on the revaluation for the year ending April 5, 1924, was for the purposes of Schedule A £21 gross and £15 15s. net, during the year ending April 5, 1923. The premises were let on a weekly tenancy of 8s. 5d., which was made up as follows: 6s. net rent, 10½d. the increase of 15 per cent. permitted under section 2 subsection (1) (*c*) of the Rent Act, 1920, and 1s. 6d. the increase of 25 per cent. allowed for repairs where the landlord is liable for the whole of the repairs under section 2 subsection (1) (*d*). Before 1923 the premises were assessed to income tax at £15 gross and £12 10s. net. The appellant contended that the gross annual value for the purposes of Schedule A was the net rent plus the 15 per cent. increase allowed under paragraph (*c*) of the Rent Act, but that the increase of 25 per cent. under paragraph (*d*) was no part of the annual value but a mere indemnity given to the landlord in respect of the increased cost of repairs.

The Court negatived this contention, holding that the 25 per cent. increase must be treated as part of the rent, as the landlord received the full amount even if he does not require to spend it on repairs. The Court said this increase was not an indemnity against the landlord's liability for repairs, but an increase in rent which he was allowed to make because, being under a covenant to repair, he must be allowed to exercise more freedom than is permitted under the Rent Act.

The Court, however, conceded that on the figures it might be hard upon the landlord that although the statutory increase allowed was 25 per cent. he was only allowed to deduct one quarter of that amount for taxation.

It is hard on the conscientious landlord as it is common knowledge that the 25 per cent. does not cover the cost of repairs at present prices, or even nearly so, and the Court admitted that even if the 25 per cent. represented the actual cost of the repairs the figures worked out hardly for the landlord, but said that if that were the case it was because the statutory allowance was not fixed high enough.

New Brighton's Promenade.

Wallasey Council has approved the draft of the Bill embodying the £750,000 scheme for the extension of the New Brighton promenade to a point on the Leasowe side of Harrison-drive, and it is hoped that it may be promoted in the next session of Parliament, and that the work will be begun in the spring of 1926. Seven years, it is stated, will be occupied in carrying out the improvement. The scheme provides for space for the erection in the Harrison-drive area, facing seawards, of private residences, boarding-houses, and an hotel or hotels.

NEW BUILDINGS IN LONDON.

Whitcombe-street.—NEW PREMISES.—Messrs. The Morris Westminster Guild, Morris House, Rochester-row, inform us that they were responsible for carrying out the metal windows for the Automobile Association, Ltd., and not as stated in our last issue.

Harrow.—The Governors of Harrow School have decided to put in hand the decoration of Harrow School Speech Room, which has been incomplete for many years. The internal decoration will be carried out mainly from a grant made by the trustees of the late Mr. J. G. Apear, and a scheme has been prepared by Sir Charles Nicholson, of New-square, Lincoln's Inn, London, W.C.2, and accepted. Outside a small building is being erected to contain a cinema apparatus for lecture purposes. In due course, if funds permit, it is proposed to complete the speech room by the addition of the tower, for which plans also have been prepared by Sir C. Nicholson.

Victoria-street.—A new block of offices are to be erected at the corner of Victoria-street and Allington-street, S.W. 1, covering a ground floor area of about 7,000 square feet. The building will be of six floors, equipped with a lift, heating on the low-pressure hot-water system, electric lighting, telephones, &c., and will be divided up into suites of offices according to the requirements of tenants. Accommodation will be provided for in the basement for strong rooms, stores, heating chamber, &c. The site has two street frontages of 60 ft. and 100 ft. respectively. A bank will occupy the corner site. The building will be erected on a steel frame with an elevation in brick and Portland stone. The floors will be of fireproof materials. The architect is Mr. J. Stanley Beard, M.S.A., of 52, Baker-street, London, W. 1. The demolition contractors are Messrs. F. Keen & Son, 469, Old Kent-road, London, S.E.

Royal Albert Docks.—Operations on the foundations for a new warehouse for the storage of tobacco at the Port of London Authority's Royal Albert Docks, E., are now in hand. The new bonded warehouse is to replace one destroyed by fire about twelve months ago. It will be of the single-story type and will have a storage capacity of 3,000 tons. The foundations are to be of concrete. The walls will be of brick and the roof will be supported on steel trusses, the total weight of steel being about 150 tons. The interior equipment will include overhead cranes and a heating and ventilating plant. The general contractors are Messrs. John Mowlem & Co., Ltd., Ebury Bridge-road, London, S.W. 1. Plans have been prepared by the Authority's engineering staff at Tower-hill, E.C. 3, under the direction of Sir Cyril Kirkpatrick, chief engineer.

Pentonville-road.—A large motor omnibus garage is being erected in Pentonville-road on a site adjoining Cleveland-square. The area to be covered has a frontage to Pentonville-road of 144 ft., and will be in plan in the form of a reversed "L," with the base running along the Pentonville-road. The main building will extend back parallel with Cleveland-square for 256 ft., and will be about 75 ft. wide. Steel frame and brick construction is being employed. The walls will be filled in with red brick with panels of stock bricks and a stone coping. Extensive glazing will also be used, a long row of metal casements being used. The floor will be of concrete. The steel work for the ground floor will be built up of three rows of stanchions spaced at 38 ft. centres, resting on a steel and concrete grillage. The height to the first floor will be 15 ft. The framework for the first floor and roof will be of 8 in. by 5 in. stanchions up to the eaves, 30 ft. above the ground. The roof will be supported by two rows of triangular principals, each of 37 ft. span. The outer covering will be of slates and asbestos-cement tiles, with a central glazed portion in the centre of each span. The floors will be of mass concrete. The Pentonville-road elevation will be in the form of a curve, which will be used as a run-in and for the installation of petrol pumps. The southern wing of the building will be devoted to the runway up to the first floor, stores, offices, lavatory accommodation, &c. The roof, in this case, will be flat, and fireproof doors will divide each building. The contractors are Messrs. Levy & Lester, of 32, York-road, King's Cross, London, N.1. The steelwork is being supplied and erected by Messrs. Measures Bros. (1922), Ltd., 105, Southwark-street, S.E.1; the metal casements by Messrs. Williams & Williams, of Sardinia House, Kingsway, W.C.2; and the tiles by Messrs. Turner Brothers Asbestos Co., Ltd., Rochdale. The architect is Mr. A. H. Lester, of 32, North-road, London, N.1.

Kensington.—The Council of the Royal Albert Hall, at Kensington, S.W., are appealing for funds to enable structural alterations to the hall to be carried out in conformity to the regulations of the London County Council. The work will include new decorations and heating and electric lighting improvements. The organ is also to be entirely reconstructed, the contract for this having been placed with Messrs. Harrison & Harrison, of Durham. The architect to the Albert Hall Council is Mr. R. Langton Cole, F.R.I.B.A., of 23, Throgmorton-street, London, E.C. 2.

Regent-street.—New premises are being built on the site of Nos. 92-94, Regent-street, W. 1, for Messrs. H. L. Brown & Sons, jewellers and diamond merchants, of London and Sheffield. The building is of seven stories and basements, and will be built on a steel frame with an outer façade of Portland stone. Green Cumberland slates will cover the Mansard roof. The builders are Messrs. Hall, Beddall & Co., Ltd., of Waterloo-road, London, S.E. 1. The architects are Messrs. Yates, Cook & Darbyshire, of 43, Great Marlborough-street, W. 1.

Cheapside.—An important site, covering Nos. 97-9, Cheapside, and 31-3, Lawrence-lane, E.C. 2, is to be developed on a building lease of 99 years. The new premises will have a frontage of 62 ft. to Cheapside, and 100 ft. to Lawrence-lane. The surveyors to the site, which has a total area of 5,238 ft., are Messrs. St. Quenton, Son & Stanley, of 34, Clement's-lane, London, E.C. 3.

Vauxhall.—A new office building is to be erected in Vauxhall Bridge-road, S.W. 1, with shops and showrooms on the ground floor. The new premises will consist of basement, ground, and three upper floors. They will be similar in design to the adjoining building, being carried out in brick, on a steel framework, with ornamental stone dressings. A Mansard roof of slates is to be provided. The floors will be of reinforced concrete. The window casements will be of steel. The general contractors are Messrs. Holliday & Greenwood, Ltd., of Stewart's-road, Battersea, London, S.W. 8. The architects are Messrs. Parnacott & Partners, of 93, York-road, Lambeth, S.E. 1.

Regent-street.—A large building of seven stories is being erected on the area at the junction of Regent-street and Glasshouse-street, W. 1, to the designs of Messrs. Yates, Cook & Darbyshire, of 43, Great Marlborough-street, W. 1. The premises are constructed on a heavy framework of steel, with extensive foundations, allowing for large basements. All the windows are of an ornamental cast-iron or steel type. The roof, of Mansard type, will be covered with Cumberland slates. The general contractors are Messrs. Thomas & Edge, of Station Chambers, Cross-street, Woolwich, S.E. 18, whilst the principal sub-contractors are as follows: Steel work, Messrs. Smith-Walker, Ltd., 33, Tothill-street, S.W. 1; Portland stone, Messrs. United Stone Firms, Ltd., 104A, Stewart's-road, Battersea, S.W. 8; fireproof floors, Messrs. F. Bradford & Co., 23, Coopersale-road, E. 9; asphalte, Messrs. Ragusa Asphalte Co., Ltd., 25, Oxford-street, W. 1; lifts, Messrs. Marryat & Scott, Ltd., 57A, Hatton-gardens, E.C. 1; casements, Messrs. A. Wootton & Son, 62, Chiswell-street, E.C. 1; pavement lights, Messrs. Geo. Wright (London), Ltd., 19, Newman street, W. 1; and sanitary fittings, Messrs. A. Goslett & Sons, Ltd., 27, Charing Cross-road, London, W.C. 2.

Wandsworth.—Large additions are being made to the buildings of the Bolingbroke Hospital, at Wandsworth Common, S.W. 11. The new extensions will principally consist of new ear and throat departments, new nurses' home, and the enlargement and alteration of the present buildings. The new buildings will vary in height from two to three stories. The buildings will be erected in brick with stone dressings. Fire-proof floors will be introduced, finished off with patent surfacing. Heating and electric lighting systems will be installed. The roofs will be flat, of concrete, with an asphalted covering. The general contractors are Messrs. John Garrett & Son, of 83, Balham-hill, Wandsworth, S.W. 12. The architects are Messrs. Young & Hall, of 17, Southampton-street, London, W.C. 1.

Cheapside.—A new retail branch stores is to be opened in Cheapside by Messrs. Austin Reed, Ltd., outfitters, as soon as the necessary structural alterations and shop fittings are completed. The work involves alterations to the ground and first floor, with the provision of an oak staircase, interior alterations in plaster, installation of electric lighting and central heating, and the fitting of shop equipment and showcases and display windows, in light polished oak. The contractors are Messrs. Harris & Sheldon, Ltd., of Wood-street, London, E.C. 2, and Birmingham. The architects are Messrs. P. J. Westwood & Emberton, of 7, Adam-street, Strand, W.C.2.

Charing Cross-road.—Premises have been acquired by the Express Dairy Co., of 26, Tavistock-place, W.C. 1, in Charing Cross-road, W.C. 1, for fitting up as a branch restaurant and café. Structural alterations and new fittings and equipment, redecorations, &c., are to be carried out to the designs of the company's chief surveyor. The contractor is Mr. F. G. Minter, Ferry Works, Putney, London, S.W. 15; and 10, Davies-street, London, W. 1.

Greenwich-road.—Extensive additions are to be made to the Miller General Hospital for South-East London, at Greenwich-road, S.E. The plans show a new ward block, giving accommodation for an additional 78 beds. Four stories in height, three floors will be devoted to wards, each having one ward of 24 beds and two single-bed wards. The remainder of the building will be used for kitchens, stores, &c., and for nurses' accommodation, including a large dining hall and lecture room. The building will be erected in brick with stone and artificial stone dressings. The roof will be of concrete, asphalted over, and will be flat. A start is also to be made on a proposed nurses' hostel, and the first portion to be put in hand will consist of a building of five stories, providing 73 bedrooms, sitting rooms, reading and recreation rooms, &c. A lift will be installed in the ward block. The architects are Messrs. W. A. Pite, Son & Fairweather, of 12, Carteret-street, Westminster. The quantity surveyor is Mr. W. J. Falkner, also of 12, Carteret-street.

Regent-street.—The old premises at Nos. 129-131, Regent-street, W. 1, are to be rebuilt, fresh leases having been granted by His Majesty's Office of Woods and Forests. The new premises will be erected to a design in conformity with the Crown's scheme of reconstruction for this thoroughfare, and approved by Mr. John Murray, F.R.I.B.A. Of seven stories in height, the building will have extensive shop windows and showrooms on the ground and first floor, and offices in the remainder. There will be large basements, containing stores, heating chamber, fuel, &c. The principal elevation will be carried out in Portland stone, with ornamental art metal fittings and window casements. A steel framework will support the main loads. The floors will be of fireproof construction. A lift will serve all floors. External fire-escape staircases will be provided. Heating on the central low pressure hot-water system and electricity for lighting and power will be installed. The roof will be of concrete, of Mansard type, and covered with slates. The architect is Mr. Robert Atkinson, F.R.I.B.A., of 36, Bedford-square, London, W.C. 1.

NEW INVENTION

IN SITU CONCRETE COTTAGE CONSTRUCTION.

A NOVEL system of concrete wall construction, known as the "R.C.C." system, has been patented by Messrs. The Rogers Construction Co., Ltd., of 9, Park-place, St. James's, S.W.1. The feature of this system is the reinforcement, which takes the form of flat sheets of sheet steel from 26 to 30 gauge stamped as shown in Fig. 1. The four triangular pieces in each of the forty-eight separate stampings in the steel sheet are bent two outwards and two inwards so as to form

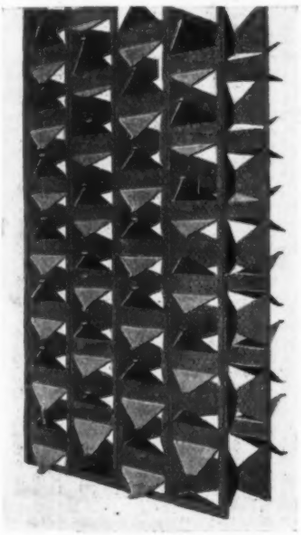


FIG. 1.

Portion of Sheet of "R.C.C." Reinforcement.

tangs, or wings, projecting from each face of the sheet. Two of these sheets are then placed face to face and fastened together by clips locking the tangs on each sheet where they come into juxtaposition.

The object of this type of reinforcement is two-fold: (1) to impart tensile strength to the wall, and (2) to make it possible to release shuttering sooner because of the support given to the concrete by the tangs which are embedded in it, as shown in section in Fig. 2. It is also claimed that to a certain extent the reinforcement acts as a vertical dampcourse, and that any moisture which might penetrate

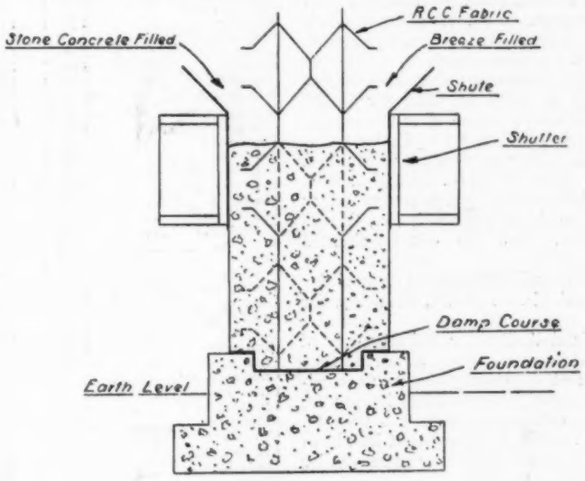


FIG. 2.

Section of "R.C.C." Walling.

the wall from the outside will be checked by the sheet metal in its centre and be conducted downwards. Any design may be followed with the reinforcement, as it may be readily cut on the site with shears.

The method of constructing walls with this reinforcement is as follows. The footings are laid with a longitudinal groove (1 in. in depth) in order to give a bond to the wall (see Fig. 2). Timber uprights are then placed at intervals around the building, as seen in Fig. 3, at distances apart according to the length of the shuttering units to be used, and as these are raised by hand a length of about 10 ft. is found convenient. These uprights are braced to be perfectly vertical, and serve as guides for the shuttering, thus ensuring the wall being built true. Similar uprights are erected on both sides of the wall. Those on the outside are built to the full height of the wall to be built. The uprights on the inside, if the building is to be of more than one story, are erected to the height of the first story only; they are then taken down and re-erected on the first-floor joists to continue the wall upwards, and so on for any number of stories.

After the footings and uprights, or shutter-guides, are in place, the shuttering is placed in position for the first pour. The shuttering used is of timber with a steel plate on the face to facilitate drawing it upwards and to obtain a good surface finish to the concrete. On each side of the uprights is a steel angle throughout its length, and inside this and resting against it outwardly the shutters are placed. They are not fixed in any way, the steel angles on the uprights preventing them from being forced outwards by the weight of the concrete, which also prevents them from falling inwards. The shutters are 15 in. in height, and are provided with a top board sloping inwards which guides the concrete down between them. Sheets of reinforcement are then placed in position in the middle of the shutters and concrete placed from each side simultaneously and tamped into the space between the two locked sheets of steel. In placing the reinforcement the sheets are erected alternately with one standing on end (6 ft. high by 2 ft. wide) and three superimposed one above the other on edge, filling an area 6 ft. by 6 ft.

It is possible for two men to fill shutters 10 ft. long by 15 in. deep in about 30 minutes. They then lift the shutters 6 in. higher and again fill them, and so on to the top of the wall. The concrete is thus left unsupported very soon after it is laid, and it is in making possible this rapid release of shuttering without waiting for the concrete to set that the chief advantage is claimed for the system, in that it is claimed that it is the support given to the concrete by the projecting tangs on the reinforcement which permits the shuttering to be removed so soon. This speedy removal of the formwork also makes it an easy matter to brush off the surface film of cement and expose the aggregate, and this method of surface treatment is adopted by the patentees for buildings erected on their system.

As will be seen, the reinforcement, being in the form of perforated sheets, practically divides the wall into two leaves. This is taken advantage of to form a wall of weather-proof gravel concrete on the outside and a breeze concrete, to avoid condensation, on the inside, and as the gravel and breeze concrete are placed simultaneously, and to a certain extent intermingled as operatives on each side of the wall tamp between the reinforcement, an excellent bond is obtained. Interior partition walls are built entirely of breeze concrete, with only one sheet of reinforcement.

This system obviates the necessity of searching for any skilled labour for the erection of the shell of a house, and, we are informed, works out at about 25 per cent. less cost than brickwork.

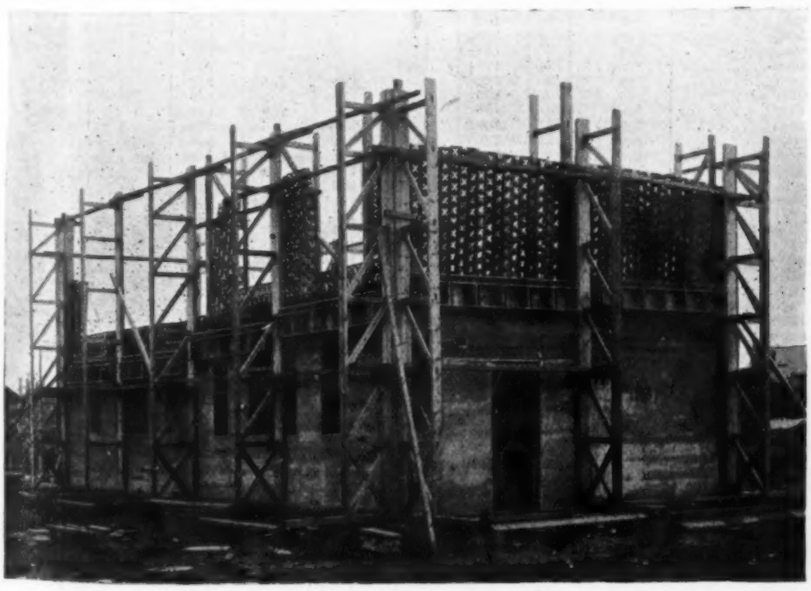


FIG. 3.

A Pair of "R.C.C." Houses Three Days after Foundations are in.

LAW REPORT

Shoreditch County Court.

In the Shoreditch County Court, recently, before Judge Cluer, Messrs. Gibson's Furniture Factories, Ltd., of 164, Hackney-road, E., sued Mr. Godfrey Gratten, of 59, Westbourne-road, Addiscombe, Croydon, constructional engineer, to recover £13 6s. for bricks supplied. This was a side-line of the plaintiffs. The defence was that he, on July 31, gave an order for 30,500 bricks at 77s. per 1,000, according to the sample shown him, which was 4 in. by 8¾ in. by 2¾ in. Those delivered, however, were much smaller, measuring only 3¼ in. by 8¼ in. by 2¼ in., with the result that he had been put to a very heavy extra cost for bricklayers, mortar, &c., due to the smaller bricks, and he counter-claimed £37 12s. 4d.

Mr. Bracknell Powell appeared as counsel for the plaintiffs, and Mr. G. Oakes, barrister, for the defendant.

Mr. George Cundell, director and secretary of the plaintiff company, said they admitted that the bricks supplied were not entirely in accordance with the sample, so accordingly he saw the defendant and made an arrangement that 1s. per 1,000 should be allowed, and that had been taken off. He agreed that as they were smaller they would cost more to lay.

Judge Cluer remarked the Romans built a beautiful aurelium wall round Rome with small bricks, and those of the Colosseum were smaller still.

In cross-examination, the witness denied that he ever agreed to make an allowance of 10 per cent. Some sample bricks were produced, and pointing to the smallest one, the defendant said that, "approximately the bricks supplied are the same size as that."

Mr. Gratten, in evidence, said that when they were delivered on the Saturday afternoon, or the first part of them, he saw they were wrong, and telephoned the plaintiffs to take them back. They asked him to accept them as they were on the road, and he had no alternative therefore.

Continuing, the defendant said that he never agreed to take 1s. a 1,000 less, but always said it was totally inadequate, because 75 of the bricks were small ones. He estimated the cost of labour and material cost him £30 extra.

In giving judgment for the plaintiff for £13 6s., and costs, Judge Cluer said the defendant had lost his case through not repudiating the letter of August 2, which made an arrangement for a reduction of 1s. per 1,000.

Proposed Ludgate Circus Overhead Roadway.

At a recent meeting of the Court of Common Council at the Guildhall, it was proposed by Mr. Walter Spyer that it be referred to the Improvements and Finance Committee to consider and report as to the possibility of providing an overhead roadway across Ludgate-circus from Farringdon-street to New Bridge-street, and the probable cost thereof.

Westminster Women's Housing Council.

Housing Councils were formed in different parts of the country in 1917, their policy being to co-operate with various housing authorities, to remove bad housing conditions, and to secure an adequate supply of healthy homes. At a meeting held at 10, Eaton-square, S.W., on Tuesday last week, Miss Berry (Secretary, Women's Local Government Society), spoke on the powers of local authorities to acquire new building sites and to assist landlords in the upkeep of their properties by paying for repairs and recovering the costs spread over a period of years. Mrs. Walter Runciman directed attention generally to the bad housing conditions in Westminster, where 6,914 basements are used for dwelling purposes. Mr. Keay (Professional Workers' Association) also addressed the meeting on the question of better accommodation, especially for less well-paid staffs who are often forced to work in basements of houses which have been taken over as business premises, without proper conversion.

RATES OF WAGES IN THE BUILDING TRADE

Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.

	Masons.	Bricklayers.	C'p'ters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bath	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bedford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Birkenhead	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Birmingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bournemouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Brentwood	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bridgwater	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Brighton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burton-on-Trent	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cambridge	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chatham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chelmsford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Colchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dudley	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
E. Glam.(Mon. Vall.)	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Eastbourne	1/5	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Exeter	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Grays	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Great Yarmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Guildford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hastings	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hereford	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ipswich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Lancaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Liverpool	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
London :—								
Within 12 m. radius	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/4½
From 12-15 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Luton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Maidstone	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Plymouth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3½
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Portsmouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Rochester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Rugby	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
St. Albans	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
St. Helens	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Scarborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Southampton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Southend-on-Sea	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stoke-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stroud	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5	1/1½
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swindon	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Taunton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Torquay	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Tunbridge Wells	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Walsall	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Windsor	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
York	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½

For rates of wages in the Building Trade in Scotland, see page 841

CONTRACTS, COMPETITIONS, &c.

Forsome contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

NOVEMBER 24.—**Barnsley.**—PAINTING.—For work required in cleansing, painting and decorating the news room of the Free Library, the Harvey Institute, for the T.C. Mr. A. D. Mason, Town Clerk.

NOVEMBER 24.—**Carlisle.**—HOUSES.—For erection of houses on the Blackwell-road and Wigton-road estates, for the T.C. Mr. H. C. Marks, City Engineer and Surveyor, 18, Fisher-street.

NOVEMBER 24.—**Chelmsford.**—COTTAGES.—For building 12 cottages in Navigation-road, for the C.B. Mr. G. E. Barford, Town Clerk, Municipal Offices, Rainsford House.

NOVEMBER 24. — **Donington.** — ADDITIONS. — For alterations and additions to the Grammar School, for the Cowley's Charity. Mr. G. Smith, Clerk to the Governors, Donington. Deposit £2 2s.

NOVEMBER 24.—**Ellington.**—SCHOOL.—For erection of new council school at Ellington, Linton, to accommodate about 350 scholars, for the Northumberland C.C. Mr. C. Williams, Director of Education, The Moot Hall, Newcastle-upon-Tyne. Deposit £2 2s.

NOVEMBER 24.—**London, S.W.**—DEMOLITION WORK.—Demolition work at the Ministry of Pensions buildings, Burton court and Cheltenham-terrace, Chelsea, S.W., for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (cheques payable to the Commissioners of H.M. Works, &c.).

NOVEMBER 24. — **London, S.W.15.** — HOUSES.—Completion of sections IV and V of the Roehampton Estate, Putney, S.W.15, as follows:—Section IV: Comprising the erection of 217 houses and administrative buildings, together with fencing, open spaces and other incidental work in connection therewith. Section V: Comprising the erection of 205 houses, including fencing, open spaces and other incidental work, together with roads and sewers, for the London County Council. Architect to the Council, The County Hall (Room No. 3), Westminster Bridge, S.E.1. Deposit £3 (payment to the Cashier).

NOVEMBER 24.—**Ogmore Vale.** — REBUILDING.—For taking down and rebuilding of frontage of the Non-Political Club. Secretary.

NOVEMBER 24.—**Tipton.**—HOUSES.—For erection of 26 houses at the Summerhill housing site and 32 houses at the Sheepwash-lane site, for the U.D.C. Mr. Wm. H. Jukes, Engineer and Surveyor, Public Offices, Owen-street. Deposit £2 2s.

NOVEMBER 25.—**Durham.**—SCHOOLS.—For builders' work in connection with the alterations and improvements to Annfield Plain Infants' school, and builders' work in the adaptation of existing buildings into an elementary school to accommodate 300 boys at Elisabethville school, for the C.C. Mr. A. J. Dawson, Director of Education, Shire Hall.

NOVEMBER 25.—**Glasgow.**—VARIOUS.—For works required in connection with the proposed erection of 155 houses at Langlands, Govan, for the T.C. Mr. J. Lindsay, Town Clerk, City Chambers.

NOVEMBER 25.—**Gosforth.**—CONVENIENCE.—For erection of a public urinal at Haddrick's Mill Bridge, for the U.D.C. Mr. F. Kirby, Joint Clerk to the Council, Council Chambers.

NOVEMBER 25.—**Greenwich, S.E.**—CHEMICAL LABORATORY.—Erection of a new Chemical Laboratory at H.M. Fuel Research Station, Greenwich, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (cheques payable to the Commissioners of H.M. Works, &c.).

NOVEMBER 25.—**Margate.**—PAVILION.—For erection of a steel and timber bathing pavilion on the Marine-terrace sands, for the T.C. Mr. E. Brooke, Town Clerk. Deposit £5.

NOVEMBER 25.—**Newhaven.**—WALLS.—For erection of boundary walls, oak park fencing, entrance gates and piers, with formation of access roads to the extension of the Cemetery, for the U.D.C. Mr. C. G. Mainwood, Clerk to the Council, Newhaven. Deposit £2 2s.

NOVEMBER 25.—**Richmond (Surrey).**—OFFICE.—For erection of an office at the Cemetery Lodge, Grove-road, for the T.C. Mr. H. Sagar, Town Clerk, Town Hall, Richmond, Surrey. Deposit 10s. 6d.

NOVEMBER 25.—**Spalding.**—EXTENSIONS.—For new assembly hall, art room, cloak room, corridors, and alterations to existing buildings at the Spalding Grammar School, for the Governors. Mr. L. C. Harvey, Clerk to the Governors, Spalding. Deposit £2 2s.

NOVEMBER 25.—**Swansea.**—HOUSES.—For erection of a further 41 houses on the Fforest Fach Estate, for the C.B. Borough Architect's Offices, Guildhall, Swansea. Deposit £3 3s.

NOVEMBER 25.—**Tonbridge.** — HOUSES.— Erection of 40 houses (comprising eight parlour and 32 living-room types) in Shipbourne-road, Tonbridge, for the Urban District Council of Tonbridge. Mr. W. Laurence Bradley, Engineer and Surveyor, The Castle, Tonbridge. Deposit £2 2s.

NOVEMBER 26.—**Altrincham.**—ADDITIONS.—For erection and completion of additions to classroom building and new manual instruction and art-room block at the County High School for Boys, for the Chester C.C. Mr. H. Beswick, County Architect, Newgate-street, Chester. Deposit £1 1s.

NOVEMBER 26.—**Dalton.**—REBUILDING.—For pulling down and re-erecting with additions, the lodge, Ravensknowle, for the Huddersfield C.B. Mr. J. Henry Field, Town Clerk, Town Hall, Huddersfield.

NOVEMBER 26.—**Fiddown.**—REBUILDING.—For rebuilding of Fiddown station buildings, co. Kilkenny, for the Great Southern and Western Railway. Mr. C. E. Riley, Secretary, Kingsbridge Terminus, Dublin. Deposit £1 1s.

NOVEMBER 27.—**Brierley Hill.**—HOUSES.—For erection of about 200 houses, in blocks of two, three, four, and six, on sites at Broadfields, Springfields, Mill-street, Brierley estate, for the U.D.C. Mr. E. W. Waldron, Clerk to the Council, Council Offices, 45, High-street. Deposit £3 3s.

NOVEMBER 27.—**Cork.**—OFFICES.—For erection of new municipal offices on the site at Albert quay, for the Corporation. Mr. W. Hegarty, Town Clerk, Town Clerk's Office, School of Art. Deposit £2 2s.

NOVEMBER 27.—**Coventry.**—TELEPHONE EXCHANGE.—Erection of a Telephone Exchange at Foleshill, Coventry, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (cheques payable to the Commissioners of H.M. Works, &c.).

NOVEMBER 27.—**Tredegar.**—CONVERSION.—For conversion of shop premises at 10, The Circle, to a dental surgery and offices. Mr. W. Conway, 10, The Circle, Tredegar.

NOVEMBER 28.—**Norfolk.**—REPAIRS.—For repairs to Marsh Farm premises, Great Winkle Level, Burgh St. Margaret, Norfolk. Mr. V. Playle, County Land Agent, Shirehouse, Norwich. Deposit £1 1s.

NOVEMBER 29.—**Conway.** — COUNTY COURT. — Erection of county court and other extensions at the Guildhall, for the Conway B.C. Messrs. Douglas, Minshull & Muspratt, architects, 6, Abbey-square, Chester. Deposit £2.

NOVEMBER 29.—**London, W.1.**—ALTERATIONS AND REPAIRS.—Tenders are invited for the following works: (1) Alterations, repairs, &c., Guardians' Offices, Northumberland-street, W.1.; (2) sundry alterations, repairs, &c., to the receiving wards, St. Marylebone Home, Northumberland-street; (3) repairs to chimney stack, Hospital, Rackham-street, W., for the St. Marylebone Board of Guardians. Messrs. Constantine & Vernon, architects, 82, Mortimer-street, W.1. Deposit £1 Treasury Note.

NOVEMBER 29.—**Sligo.**—EXTENSIONS.—For erection of a cattle loading bank, over 700 ft. long and 25 ft. wide, together with the necessary railway siding and connections, also extension of an existing siding, at their Collooney Station, in the county of Sligo. Mr. S. C. Little, Secretary, Head Office, Enniskillen. Charge 10s.

NOVEMBER 29. — **Thomastown.** — REPAIRS. — For carrying out certain new works and repairs to cottages in Scheme No. 6, for the Sailor and Soldiers' Department. Mr. R. E. Beckerson, Sailor and Soldiers' Department, 30, Fitzwilliam-street, Dublin. Deposit £1 1s.

DECEMBER 1.—**Boston.**—ADDITIONS.—For additions to the grammar school, for the Holland E.C. Mr. J. R. McKnight, Director of Education, Holland Education Offices, Spalding. Deposit £2 2s.

DECEMBER 1.—**Chelmsford.**—PAINTING.—For repainting offices, Waterloo-lane, for the R.D.C. Mr. J. Dewhirst, Surveyor to the Council, Waterloo-lane.

DECEMBER 1.—**Salford.**—SUB-STATION.—For erection of a small electricity sub-station building in Weaste, for the C.B. Mr. L. C. Evans, Town Clerk.

DECEMBER 1.—**Tottenham, N.**—DWELLINGS.—Erection of 70 three-story dwellings in Lordship-lane, on the White Hart-lane Estate, Tottenham, for the L.C.C. Architect to the Council, The County Hall (Room No. 3), Westminster Bridge, S.E.1. Deposit, £2 (payable to the Cashier of the Council).

DECEMBER 2.—**Tipton.**—EXTENSION.—For extension of Bedford House Clinic, Horseley-road, for the E.C. Mr. W. J. Howell, Director of Education.

DECEMBER 3.—**Hove.**—TELEPHONE EXCHANGE.—For the erection of telephone exchange, for the Commissioners of H.M. Works, &c. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

✱DECEMBER 3.—**Tooting, S.W.17.**—PLASTERING AND TILING.—Plastering and tiling works at Tooting Bec Hospital, extension works, Church-lane, Tooting, S.W.17, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

DECEMBER 3.—**Welwyn.**—COTTAGES.—For erection of 200 cottages in the parish of Welwyn Garden City, for the R.D.C. Mr. P. Elton Longmore, Clerk to the Council, 24, Castle-street, Hertford. Deposit £2 2s.

DECEMBER 4.—**Southwell.**—SEWERAGE DISPOSAL.—For construction of a small sewage disposal works in the parish of Edwinstowe, for the R.D.C. Mr. J. Ellis, Clerk to the Council, Westgate, Southwell, Notts. Deposit £2 2s.

✱DECEMBER 5.—**Hornchurch.**—REPAIRS.—External and internal repairs to the whole of the buildings, &c., at their Cottage Homes, Hornchurch, near Romford, Essex, for the Guardians of the Poor of the Parish of Saint Leonard, Shoreditch. Guardians' Architect, Mr. F. Danby Smith, F.R.I.B.A., Parliament Mansions, Victoria-street, Westminster, S.W.1. Deposit £2.

✱DECEMBER 5.—**Lambeth, S.E.**—STORES, OFFICES AND GARAGE.—Erection of stores, offices and garage at Lambeth, for the Receiver for the Metropolitan Police District. Mr. G. Mackenzie Trench, A.R.I.B.A., F.S.I., Police Architect and Surveyor, New Scotland Yard, London, S.W.1. Deposit £1 1s.

DECEMBER 5.—**Wortley.**—PAVILION.—For erection of a sports pavilion in Ecclesfield Park, for the R.D.C. Mr. J. Morton, Clerk to the Council, Council Offices, Grenoside. Deposit £2 2s.

✱DECEMBER 6.—**Hove.**—HOUSES.—For erecting 22 small houses in Portland-road, and 70 at the Housing Estate in Old Shoreham-road, for the Borough of Hove. Borough Surveyor's Office, Hove. Deposit £1 1s.

DECEMBER 6.—**Westgate-on-Sea.**—PAVILION AND BATHING ACCOMMODATION.—Erection of (1) pavilion, (2) bathing accommodation and public convenience, for the Westgate-on-Sea Council. Mr. F. J. Cornford, Town Hall Buildings, Westgate-on-Sea. Deposit £1 1s.

DECEMBER 8. — **Bridgend.** — ALTERATIONS. — For alterations at the Cottage Homes, for the B.G. Mr. R. Harmar Cox, Clerk to the Guardians, Union Offices, Bridgend.

DECEMBER 8.—**Farnborough.**—COTTAGES.—For erection of six cottages in Queen's-road, for the U.D.C. Mr. J. E. Hargreaves, Surveyor, Town Hall. Deposit £1.

DECEMBER 8.—**Haslingden.**—HOME.—For erection of a new nurses' home at their Moorland Infirmary, Rawtenstall, for the B.G. Mr. A. N. Rothwell, Clerk to the Guardians, Union Offices, Rawtenstall. Deposit £2 2s.

DECEMBER 10.—**Belfast.**—SHED.—For erection of a goods shed on the east side of the Dufferin Dock, for the Harbour Commissioners. Mr. M. J. Watkins, General Manager and Secretary, Harbour Office.

DECEMBER 10.—**Middlesex.**—HOSPITAL.—Erection of a hospital for 173 beds, nurses' home, and children's probation block, Edgware, Middlesex, for the Guardians of the Hendon Union. Mr. C. W. Wyles, Clerk to the Guardians, Union Offices, Edgware. Deposit £5.

DECEMBER 16.—**Wakefield.**—ALTERATIONS.—For alterations required at Queensbury Upper Council School, for the West Riding C.C. The Education Department, County Hall, Wakefield.

✱NO DATE.—**Chelsea, S.W.**—HOUSES.—Erection of 12 houses in Chelsea, S.W. Mr. Arthur C. Geen, M.S.A., architect and surveyor, 38, Beauchamp-place, Brompton-road, S.W.3.

✱NO DATE.—**Edgware.**—HOUSES.—Erection of 50 houses at Edgware. Mr. Arthur C. Geen, M.S.A., architect and surveyor, 38, Beauchamp-place, Brompton-road, S.W.3.

✱NO DATE.—**Leyland.**—HOUSES.—For the erection of 30 houses on Sandy-lane site, for the U.D.C. The Council's Surveyor, Public Hall Buildings, Towngate, Leyland.

✱NO DATE.—**London, N.W.**—BILLIARD ROOM.—Erection of a billiard room at the Harlesden Working Men's Club. Messrs. Sinnett, Lane & Betteridge, Station-road, Willesden Junction.

NO DATE.—**Nelson. (Glam.).**—CONVERSION.—For preliminary alterations of the premises recently acquired for the conversion into a workmen's hall and institute. Mr. H. Gabe Jones, architect and surveyor, Bank Chambers, Hengoed, Glam.

✱NO DATE.—**Tunbridge Wells.**—HOUSES AND FLATS.—Erection of 30 houses and flats, or any part thereof, adjoining the Hawkenbury Housing Estate. Messrs. Culpin & Bowers, 27A, Bush-lane, London, E.C. 4.

FURNITURE, MATERIALS, etc.

NOVEMBER 24.—**Alsager.**—PIPES.—For supply of about 20 tons of 3 in. cast-iron pipes, for the U.D.C. Mr. H. V. Lynam, Surveyor to the Council, Council Offices, Alsager.

NOVEMBER 24.—**Epsom.**—MAINS.—For supply and delivery of 2,000 yds. of 4 in. cast-iron socket and spigot water main and 880 yds. of 5 in. cast-iron socket and spigot water main, for the U.D.C. Mr. E. G. Wilson, Clerk, 37, Church-street, Epsom.

NOVEMBER 24.—**Felling.**—MATERIALS.—For supply of Portland cement, &c., for the U.D.C. Mr. W. P. Parkin, Clerk of the Council, Council Buildings, Felling-on-Tyne.

NOVEMBER 25.—**London.**—WOOD BLOCKS.—For the supply and delivery of about 30,000 creosoted yellow deal paving blocks, for the Islington B.C. Mr. C. G. E. Fletcher, Town Clerk, Municipal Offices, Tyndale-place, Upper street, N. 1.

NOVEMBER 26.—**Manchester.**—IRON.—Supplies of iron castings, for the T.C. Mr. P. M. Heath, Town Clerk.

NOVEMBER 29.—**Hindley.**—GRANITE.—For supply of about 1,500 tons of 4 in. by 5 in. granite setts, for the U.D.C. Mr. T. Robey, Clerk to the Council, Council Offices.

ENGINEERING, IRON AND STEEL.

NOVEMBER 24.—**Malton.**—BRIDGE.—For construction of a reinforced concrete footbridge alongside the existing bridge over the River Derwent between Malton and Norton, for the N. & E. Riding County Councils. Mr. J. Bickersteth, Clerk of the East Riding C.C., County Hall, Beverley.

NOVEMBER 24.—**Rhondda.**—STEELWORK.—Supply of 270 and 190 tons of bridge steelwork, for the U.D.C. Mr. E. Taylor, Engineer and Surveyor, Council Offices, Pentre.

NOVEMBER 27.—**Irvine.**—REPAIRS.—For concrete sheet piling and other concrete, stone and filling work, renewing gear for working tilting steel shutters, and other work required to make good the weir and the adjoining banks and channel for the River Irvine, for the T.C. Messrs. D. Gillies and A. R. Wilson, Joint Town Clerks, Council Chambers. Deposit £1 1s.

NOVEMBER 28.—**Ormesby.**—RESERVOIRS.—For construction of two covered service reservoirs, for the Tees Valley Water Board. Mr. T. S. Calvert, Clerk to the Board, Water Board Offices, Middlesbrough. Deposit £2.

DECEMBER 1.—**Egypt.**—TOWER.—For erection of a water tower at Init Ghamr, for the Ministry of Interior. Department of Overseas Trade, 35, Old Queen-street, S.W. 1.

DECEMBER 1.—**Stone.**—TANK.—For construction of a separator and humus tank, for the U.D.C. Mr. C. H. Matthews, Clerk to the Urban District Council, Town Hall. Deposit £1.

DECEMBER 5.—**South Africa.**—SEWERAGE.—For erection of a pumping station and some machinery and cast-iron rising mains, for the City Council of Port Elizabeth. Messrs. Davis & Soper, Ltd., 54, St. Mary-axe, E.C. 3, or Mr. W. How, Town Clerk, City Hall. Deposit £2.

DECEMBER 6.—**Dewsbury.**—TANKS.—For construction of percolating filters, humus tanks, and other appurtenant works in connection with the construction of sewage disposal works at Mitchell Laithes, for the T.C. Mr. Holland Booth, Town Clerk, Town Hall. Deposit £2 2s.

DECEMBER 6.—**Wilmslow.**—TANKS.—For construction of screen chamber, suction wells, settling tanks, percolating filters and humus tanks; sundry lengths of pipe line, and auxiliary works at their Southern Sewage Farm, for the U.D.C. Mr. H. Cliffe, Clerk to the Council, Clerk's Office, Wilmslow, Cheshire. Deposit £5.

DECEMBER 20.—**Egypt.**—RESERVOIR.—For construction of a steel reservoir, for the Ministry of the Interior. Department of Overseas Trade, 35, Old Queen-street, S.W.1.

DECEMBER 31.—**Hamilton.**—BRIDGE.—**Erection of Clyde Bridge, Hamilton, for the Joint Committee of the County Council of the County of Lanark, Town Council of the Burgh of Hamilton, and Town Council of the Burgh of Motherwell and Wishaw. Messrs. Formans & M'Call, C.E., 160, Hope-street, Glasgow. Deposit £1 1s.**

ROAD, SANITARY, AND WATER WORKS.

NOVEMBER 24.—**Chesterfield.**—MAINS.—For construction of six main intercepting sewers with all necessary manholes and subsidiary works, consisting of 2,317 yds. of stoneware pipe sewers and 429 yds. of cast-iron pipe sewers, for the T.C. Mr. V. Smith, Borough Engineer and Surveyor, Engineer to the Scheme, Borough Engineer's Office, 2, Gluman-gate, Chesterfield. Deposit £2 2s.

NOVEMBER 24.—**Chesterfield.**—SEWAGE WORKS.—For construction of a sewage disposal works, for the T.C. Mr. V. Smith, Borough Engineer and Surveyor, Engineer to the Scheme, Borough Engineer's Office, 2, Gluman-gate. Deposit £5 5s.

NOVEMBER 24.—**Exmouth.**—SEWER.—For (1) Excavation, roadmaking, and other contingent work in connection with the widening of Hulham-road for a distance of approximately 460 yds; (2) excavation, laying, &c., of a 9 in. sewer in Littleham-road, for the U.D.C. Mr. S. Hutton, Engineer and Surveyor, Council Office.

NOVEMBER 24.—**Lichfield.**—TUBING.—For provision and laying of about 3,000 yds. of 1½ in. diameter galvanised tubing water service, from Hilliards-cross to the Woodend Hospital, Curborough, with appurtenant works, for the T.C. Mr. W. Brocksom, Town Clerk, Guildhall.

NOVEMBER 24.—**Manchester.**—PAVING.—For draining, paving with concrete, for the T.C. Mr. P. M. Heath, Town Clerk, Town Hall. Deposit £1 1s.

NOVEMBER 24.—**Oxfordshire.**—ROAD.—For improvements to the London-Oxford-road, Section 4, Bucks County boundary at Stokenchurch, to Postcombe, for the C.C. Mr. A. E. Cockerton, County Surveyor, 8, New-road, Oxford. Deposit £10.

NOVEMBER 24.—**Rhondda.**—ROADS.—Construction of roads and sewers for the 200 houses at Wattstown, for the U.D.C. Mr. E. Taylor, Engineer and Surveyor, Council Offices, Pentre.

NOVEMBER 24.—**Southend-on-Sea.**—SEWERAGE.—For construction of concrete tube sewers, consisting of approx. 397 yds. of 24 in. diameter, 94 yds. of 21 in. diameter, and 83 yds of 18 in diameter, also 650 yds. cast-iron pipe sewer, 18 in. diameter, depths up to 24 ft., and including 38 yds. of heading and crossing over railway, and incidental works, for the C.B. Mr. H. J. Worwood, Town Clerk, Municipal Buildings, Clarence-road. Deposit £2.

NOVEMBER 24.—**Tanfield.**—REPAIRS.—For street works at back Robson-terrace, Flint-hill, for the U.D.C. Mr. Geo. Arkless, Clerk to the Council, Council Offices, Tanfield, Tantobie, S.O.

NOVEMBER 24.—**Teignmouth.**—ROADS.—For (1) Widening and making-up of Mill-lane, (2) construction of a surface water drain in Dawlish-road, for the U.D.C. Mr. F. W. Knight, Surveyor and Water Engineer, Town Hall.

NOVEMBER 24.—**Wombwell.**—FOOTPATHS.—For constructing surface water drain, building manholes, forming roadways, channelling and footpath, and laying kerb and other works, for the U.D.C. Mr. P. Milnes Walker, Clerk to the Council, Town Hall, Wombwell. Deposit £1 1s.

NOVEMBER 25.—**Cheshunt.**—SEWER.—For construction of about 535 yds. of 24 in. diameter concrete pipe surface water sewer, together with the necessary manholes, and other works, for the U.D.C. Mr. J. E. Sharpe, Engineer and Surveyor to the Council, Manor House. Deposit £2 2s.

NOVEMBER 25.—**Gosforth.**—IMPROVEMENTS.—For road improvements at the west end of Elmfield-road, for the U.D.C. Mr. Frank Kirby, Joint Clerk to the Council, Council Chambers.

NOVEMBER 25.—**Waltham Cross.**—SEWER.—For construction of about 535 yds. of 24 in. diameter concrete pipe surface water sewer, together with the necessary manholes and other works, for the U.D.C. Mr. J. E. Sharpe, Engineer and Surveyor, Manor House, Cheshunt. Deposit £2 2s.

NOVEMBER 26.—**Dunfermline.**—MAINS.—For providing, laying, and jointing four miles of 18 in. diameter cast-iron water main, with other relative works, for the Fife C.C. Mr. G. J. Sherriff, District Clerk, 30, Queen Anne-street, Dunfermline. Deposit £2 2s.

NOVEMBER 26.—**Langwith.**—SEWERAGE.—For construction of about 4,160 lin. yds. of stoneware and iron pipe sewers, together with manholes and all appurtenant works, for the Blackwell R.D.C., and Bolsover U.D.C., and Blythe and Cuckney R.D.C. Mr. W. S. Cockerham, Clerk to the Committee, 106, Stockwell Gate, Mansfield. Deposit £5 5s.

NOVEMBER 28.—**Ashby Woulds.**—SEWERS.—For laying about 500 yards of 9 in. diameter sewers at Albert Village, for the U.D.C. Mr. G. E. Marlow, Surveyor, Town Hall, Ashby-de-la-Zouch.

NOVEMBER 28.—**Calder.**—PIPES.—For laying and jointing of about 9½ miles of cast-iron pipes, and constructing two concrete tanks and a filter, with relative works, for the Midlothian C.C. Mr. A. G. G. Asher, County Clerk, County Buildings, Edinburgh. Deposit £1.

NOVEMBER 28.—**Near Birmingham.**—SEWERAGE.—For construction of drains, manholes and inspection chambers at Great Barr-park, for the Walsall and West Bromwich Unions. Mr. A. H. Ward, Clerk. Deposit £3 3s.

NOVEMBER 29.—**Glasgow.**—ROADS.—For constructing about two miles of roadway, forming part of a new road, at a higher level than the former road along the north side of Loch Katrine, including the construction of eleven bridges with their ironwork complete, and all accessory works, &c., for the T.C. Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow. Deposit £2 2s.

NOVEMBER 29.—**Hindley.**—MAKING-UP.—For taking up of grit setts, excavating, concreting, and paving with granite setts about 6,000 sq. yards in Leigh-road, Hindley Green, for the U.D.C. Mr. T. Robey, Clerk to the Council, Council Offices. Deposit £2 2s.

NOVEMBER 29.—**Tilbury.**—FOOTWAYS.—For works in connection with the reconstruction in artificial stone paving and re-bedding and levelling of kerbs to footways on both sides of 22 unclassified roads or streets, for the U.D.C. Mr. A. W. Buckner, Clerk of the Council, Council Offices. Deposit £2.

NOVEMBER 29.—**Tilbury.**—ROAD.—For works in connection with the reconstruction in reinforced concrete, portion of Calcutta-road, for the U.D.C. Mr. A. W. Buckner, Clerk of the Council, Council Offices. Deposit £1.

NOVEMBER 29.—**York.**—SEWERS.—For construction of 9 in. sewers, surface water drains, manholes, &c., for the T.C. Mr. F. W. Spurr, City Engineer, Guildhall. Deposit £2 2s.

DECEMBER 1.—**Romford.**—REPAIRS.—For widening and reconstructing about 650 yds. of Church Elm-lane, Dagenham, extending Nelmes-road, Hornchurch, for about 25 yds., and also widening and diverting Coombe Green-road, Cranham, for about 200 yds., for the R.D.C. Mr. T. W. A. Greenhaigh, Clerk to the Council, 16A, South-street, Romford.

DECEMBER 1.—**Sunbury-on-Thames.**—SEWER.—For about 150 yds. of 8 in. glazed stoneware pipe sewer in Manor-lane, with all necessary manholes and contingent works, for the U.D.C. Mr. E. Beeching, Clerk, Council Offices.

DECEMBER 1.—**Woodford.**—SEWER.—For construction of about 31 lin. yds. of 9 in. stoneware pipe sewer, with manholes, &c., in Broomhill-road, Woodford Green, for the U.D.C. Mr. W. Farrington, Surveyor to the Council, Council Offices, Woodford Green.

DECEMBER 2.—**Kensington and Hammersmith.**—SEWER CONSTRUCTION.—For the construction of a 9 ft. 6 in. internal diameter sewer in cast-iron, with concrete lining, of a total length of about 9,695 ft.; also 6 ft. internal diameter sewer in cast-iron, with concrete lining, of a total length of about 2,375 ft., for the L.C.C. Chief Engineer of the Council, Old County Hall, Spring-gardens, S.W.1. Deposit £10.

DECEMBER 3.—**Dinas Powis.**—IMPROVEMENTS.—For street improvement works in Elmgrove-place, for the Cardiff R.D.C. Mr. M. Warren, Clerk, Park House, Cardiff.

✱DECEMBER 3.—**Hove.**—WOOD PAVING.—Providing and laying wood paving in portions of Church-road, Holland-road and Western-road (about 15,820 yds. super.), for the Hove B.C. Mr. H. H. Scott, Borough Surveyor, Town Hall, Hove.

✱DECEMBER 3.—**London, S.W. 6.**—SANITARY WORK, &c.—(*a*) Removal of division wall and tiling to walls of kitchen and scullery; (*b*) sanitary work, including the provision and fixing of bed-pan sinks, scalding sinks, &c., at the Western Fever Hospital, Seagrave-road, Fulham, S.W. 6, for the Metropolitan Asylums Board. Office of the Board, Victoria-embankment, E.C. 4. Deposit £1 in respect of each work.

DECEMBER 3.—**Stevenage.**—OUTFALL.—For reconstruction of the outfall works, for the U.D.C. Mr. W. O. Times, Clerk to the Council, Council Offices, Stevenage. Deposit £3 3s.

DECEMBER 4.—**Southwell.**—PIPES.—For provision and laying of about one mile of 12 in. and 9 in. stoneware pipe sewers, and the construction of sewage disposal works, at Clipstone, for the R.D.C. Mr. J. Ellis, Clerk to the Council, Westgate, Southwell, Notts. Deposit £2 2s.

DECEMBER 4.—**Wanstead.**—MAKING UP.—For making up of Broad-walk, for the U.D.C. Mr. Bruce Blewitt, Clerk to the Council, Council Offices.

DECEMBER 8.—**Crewe.**—ROADS.—For making up part of Gainsborough-road, for the T.C. Mr. H. S. K. Feltham, Town Clerk, Municipal Buildings. Deposit £2 2s.

DECEMBER 8.—**Epsom.**—MAINS.—For providing, laying, excavating and jointing of about 2,829 yards of 4 in. cast-iron water main, including valves, fire hydrants, &c., for the U.D.C. Mr. E. G. Wilson, Clerk, 37, Church-street,

Competitions.

(*See Competition News, page* 808.)

Auction Sales, Tenders, etc.

NOVEMBER 25.—**London, E.C.**—Mr. Ernest W. Beard will sell, at Winchester House, Old Broad-street, E.C., the important freehold business premises known as Nos. 5, 6, and 7, Gray-street, Duke-street, W.1; frontage 100 ft., workshops, cellarage, the site area being about 4,200 sq. ft.; estimated rental value, £1,200 per annum. Auctioneers, 109, Great Russell-street, Bedford-square, W.C.1.

✱NOVEMBER 25.—**London, W. 6.**—Messrs. Henry Butcher & Co. will sell (by order of Mr. S. W. Rowland, trustee under a deed of assignment, *re* W. Tomes, stone and marble merchant), on the premises, 8, The Grove, Hammersmith, W. 6, plant, machinery and stock of a stone and marble merchant, including office furniture and other equipment. Auctioneers, 63 & 64, Chancery-lane, W.C. 2.

NOVEMBER 26.—**Colnbrook, near Staines.**—Messrs. Gale, Power & Co. will sell, by order of the Receiver for the debenture holders, at the Railway Hotel, Staines, equipped sand, gravel and ballast pit situate at Colnbrook, three miles from Staines, having a total area of about 23 acres. Auctioneers, 35, Sackville-street, Piccadilly, W.1, and 122, High-street, Staines.

✱NOVEMBER 28.—**Cambridge.**—Messrs. Scruby & Gray are instructed by Mr. W. R. Elworthy, A.C.A., the Receiver appointed by the debenture holders, to sell in the store yard, *re* Wm. Saint, Ltd., The Store Yard, St. Barnabas-road, Cambridge, building material and plant. Auctioneers, 29, St. Andrew's-street, Cambridge.

✱NOVEMBER 28.—**Crawley, Sussex.**—Mr. C. E. Clark will sell, without reserve, new timbers, at White Lion Field, White Lion Hotel, at 2 p.m. Auctioneer Beddington House, Beddington, near Croydon.

✱DECEMBER 2.—**London, W. 12.**—Mr. F. H. Clark will sell, without reserve, at the Cent al Stores Depot, No. 401, Wormwood Scrubbs, Wood-lane, Shepherd's Bush, steel-framed building, hutting, timber and building materials, cast and wrought iron piping, corrugated galvanised iron sheets, hot water radiators, sheets wired glass, shovels, new pick helves, &c. Auctioneers, Railway Wharf, York-road, Wandsworth, S.W. 18.

DECEMBER 2 AND FOLLOWING TWO DAYS.—**London, E.**—Messrs. Joseph Hibbard & Sons will sell, without reserve, by order of the Liquidators, Messrs. E. Hight and G. G. Liverman, *re* Price & Low, Ltd. (in voluntary liquidation), at the two depots at 118, Hoxton-street and 49, Hackney-road, stock of timber and various other items. Auctioneers, 15, Newington Green, Islington, London, N.16.

DECEMBER 9.—**East Kent.**—Messrs. Hampton & Sons will sell, at the St. James' Estate Rooms, 20, St. James'-square, S.W.1, freehold residential and building property of over 14½ acres, to be offered in one or six lots. Auctioneers, 20, St. James'-square, S.W.1.

✱DECEMBER 9 AND 10.—**London, E.C.4.**—Messrs. Fuller, Horsey, Sons, & Cassell will sell, by order of the Ministry of Transport, road contractors' plant, at 11 o'clock each day, at the Merchants' Hall, Baltic Exchange, St. Mary Axe. Auctioneers, 11, Billiter-square, E.C.3.

DECEMBER 12.—**Weymouth.**—Messrs. Fuller, Horsey, Sons & Cassell will sell in lots at the Whitehead Torpedo Factory, Weymouth, building material, steel joists, angles, steam piping, roof trusses glazing bars, timber, &c. Auctioneers, 11, Billiter-square, E.C. 3.

Public Appointments.

✱NOVEMBER 28.—**South Wales.**—Head Clerk of Works and a Walking Clerk of Works in connection with the erection of the buildings for the Departments of Physics and Chemistry in Cathays Park, Cardiff. Apply Mr. D. J. A. Brown, Registrar, University College of South Wales and Monmouthshire, University College, Cathays Park, Cardiff.

NOVEMBER 29.—**Birmingham.**—CLERK OF WORKS.—Clerk of Works required for housing schemes. Mr. Herbert H. Humphries, City Engineer and Surveyor and Executive Officer for Housing Schemes, The Council House, Birmingham.

NOVEMBER 29.—**Cheltenham.**—CLERK OF WORKS.—Clerk of Works required to supervise the construction of gravity pre-filters, ferro-concrete tanks (Hennebique system) and concrete block filter and engine house (contract about £8,000), for the Corporation of Cheltenham. Mr. J. S. Pickering, Borough Engineer, Municipal Offices, Cheltenham.

DECEMBER 1.—**Rochester.**—CLERK OF WORKS.—Clerk of Works required for a large sewerage scheme intended to be begun in the near future, for the City Corporation of Rochester. City Surveyor, Guildhall, Rochester.

✱DECEMBER 4.—**Lewes.**—Quantity Surveyor required on the temporary staff in connection with the proposed new County Secondary Schools, by the East Sussex County Council. Mr. Fred. J. Wood, A.M.I.C.E., M.S.A., County Surveyor, County Hall, Lewes.

✱NO DATE.—**Hong Kong.**—ARCHITECTURAL ASSISTANTS.—Assistants (three) required by the Government of Hong Kong, for service in the Architectural Office of the Public Works Department, for a period of three years, with possible permanency. Crown Agents for the Colonies, 4, Millbank, Westminster, S.W. 1, quoting "M/12919."

✱NO DATE.—**Hong Kong.**—OVERSEER.—Overseer required by the Government of Hong Kong, for the Public Works Department, for three years' service, with possible permanency, to supervise work in connection with the maintenance, repairs and minor extension of Government buildings. Crown Agents for the Colonies, 4, Millbank, Westminster, S.W. 1, and quoting "M-12921."

PROPOSED NEW BUILDINGS & OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; and B.E. for Board of Education.

ALDERSHOT.—The T.C. passed plan for house and shop in Lower Farnham-road, for Mr. E. Field.

ALFRETON.—The U.D.C. has agreed to seek the authority to erect 120 houses.

ALNWICK.—The Governors of the Infirmary decided to build a new wing to the Infirmary.

ALTRINCHAM.—The Surveyor has submitted details and plans illustrating the type of houses and lay-out for the erection of 24 houses.

ANNFIELD PLAIN.—Plans passed by the U.D.C.: Eight houses on the West Kyo site, for Messrs. Thompson & Brown; 2 bungalows, Loud-hill site, for Mr. C. Steel; house, Loud-hill site, for Mr. M. Southren; 2 houses, Loud-terrace, for Mr. J. J. Bulmer.—The authority has approved the design of the proposed war memorial for Annfield Plain Park.

AUCHINLOCH.—Messrs. Jas. Nimmo & Co., Ltd., are to erect 152 houses at West Auchinloch, in connection with the housing of their employees of their mining development at Lumloch.

BARNARD CASTLE.—The U.D.C. passed a plan for a bungalow in the Flatts Wood, for Mr G. A. Carter.

BARNSLEY.—A site at Wilthorpe housing estate has been allocated for the erection of an elementary school.—Approval has been given to a lay-out plan prepared by the B.S. for land at Carlton, for housing.—The Streets Committee has approved of proposals submitted by Mr. C. F. Moxon, architect on behalf of Mr. Edward Harral, with regard to buildings to be erected at Graham's Orchard and Shambles-street corner.—The Manor House site has been agreed upon for the erection of the proposed mining college and technical institute.—Information has now been obtained as to departmental requirements in the new Town Hall scheme and forwarded to the Borough Surveyor.—In connection with the suggested erection of municipal washhouses, the Baths Manager has been asked to get detailed information on the subject from other towns.—Plans passed: Eight houses, Dodworth-road, for Mr. F. Oxley: 2 houses, Dodworth-road, for Mr. Goodworth; extensions to workhouse, for Board of Guardians.

BARROWFORD.—Plans have been approved for the erection of semi-bungalows in Colne-road, for Mr. H. Sellers; and also for Messrs. Earnshaw & Crabtree.

BECKENHAM.—The U.D.C. passed plans: Six houses in Kingshall-road, three in Shortlands-road, a new parish room at St. James'-avenue.

BEDLINGTONS, IRE.—The U.D.C. agreed to seek the sanction of the M.H. to borrow £34,200 for the erection of 76 houses at Sleekburn.

BEDWAS.—The Bedwas Navigation Colliery Co., Ltd., is to proceed with 150 of the 178 houses sanctioned for erection by the Company.

BENFIELD SIDE.—The U.D.C. is making application to the M.H. for permission to proceed with the erection of 40 houses at Shotley Bridge.

BEVERLEY.—The T.C. is to convert the rifle range buildings into a school clinic, at a cost of £1,150.—Police cells and yard at the Guildhall are to be converted into a fire station, at a cost of £350.—A teachers' room is to be provided at Spencer school.—Further houses are to be erected, and Mr. R. Whiteing has been appointed as architect.

BEXHILL.—The T.C. has decided to invite tenders for the erection of a pavilion in Pole-grove.—The T.C. has made arrangements with Messrs. W. J. Simms, Sons & Cooke, Ltd, to construct a further 6 houses on the London-road site.—Tenders are to be invited for the erection of 10 houses on Little Common estate.

BIRKENHEAD.—Plans passed: Sixteen houses, from Alderley-avenue to Woodsorrel-road.

BIRMINGHAM.—Loan sanctions as follows have been granted: Purchase of site for elementary school, in Hall Green, £560; improvements at Cowper-street School, £4,800; alterations to Summer-lane generating station, £104,000; erection of houses and purchase of sites, £1,000,000.

BISHOPS STORTFORD.—The U.D.C. approved plans: House, Elm-road, for Mr. F. Markwell; detached villa, South road, for Mr. Bradshaw.

BLACKPOOL.—Tenders have been invited for the erection of new grammar school premises, for the Governors of Baines' Charity, estimated to cost £18,000. Mr. Halstead Best, of Blackpool, is the architect.—The Building Plans Committee have approved plans for 81 houses by private enterprise.—Application is being made to the M.H. for sanction to borrow £136,655 for sewerage works improvements.

BLYTH.—An inquiry was conducted by Mr. A. W. Brightmore, on behalf of the M.H., into an application by the T.C. for permission to borrow £5,500 for the construction of a promenade, sea-wall, &c., at Links-road, the total cost of which is £10,000.

BOLTON.—The Streets Committee of the T.C. have under consideration the improvement and reconstruction of Lever Bridge.—The B.G. are to consider the establishment of a central registration office.—Sanction has been received from the M.H. for the proposed extensions at Townley's Hospital, and the provision of a new laundry at Fishpool Institution.

BOLTON-ON-DEARNE.—The U.D.C. is seeking sanction to erect 500 dwellings.

BOWLAND.—The Surveyor to the U.D.C. has been in touch with the M.T. regarding the proposed new bridge over the river Ribble at Swindleton.

BRENTFORD.—The Housing Committee recommends the subsidy in respect of 20 houses to be erected by Messrs. Steel in Church-walk.—The Surveyor has prepared plans for a lodge and garage at the Isolation Hospital, to cost £650.—Plans passed: 20 houses, Church-walk, for Mr. Davies.

BRYNMAWR.—Plans submitted to the U.D.C.: House, Llwynpwll, for Mr. A. Webb.

BURNLEY.—The Borough Surveyor has been instructed to prepare plans for 40 houses, with a view to this scheme being submitted to the M.H.

BURY.—Work has been commenced on the foundation of the new central labour club to be erected in Irwell-street; the contractors are Messrs. J. Greenwood & Co.

CARLISLE.—Land at Blackwell is to be acquired compulsorily for housing purposes.—Plans passed: House, Dykes-terrace, for Mr. H. Irving Graham; 14 garages, St. Paul's-square, for Mr. W. C. Johnson.

CARNARVON.—The T.C. is submitting to the M.H. a scheme for the erection of 56 houses, according to plans prepared by the architect, Mr. Rowland Lloyd Jones.—The B.S. is to prepare plans for a waiting room and parcel room at the parking ground.

CHELTENHAM.—It is now proposed to deal with the Stanhope-street slum area. Plans passed: Two houses, Halland-road, for Miss Barnard.

CHESHIRE.—The E.C. have decided to provide schools for the Bromborough and New Ferry districts. It is proposed to purchase lands for the buildings at a cost of £4,471, the New Ferry site to cost £2,662. A new school for Ellesmere Port is to cost £15,148.

CHORLEY.—The B.G.'s plans for the erection of a new mortuary at the Eaves-lane institution were provisionally approved.—The Corporation are considering the question of providing new public baths.—The B.S. has been asked to prepare a plan and an estimate for the construction of an open-air bath in Astley-park.—The T.C. has accepted tenders for the erection of 60 houses on the Highfield estate; application is also being made to the M.H. to allocate an additional 50 houses to Chorley, to be erected by private enterprise.

COBHAM.—The Catholic congregation are raising funds for the purchase of a site for a new church.

COULSDON.—Plans passed by the U.D.C.: Fourteen houses, Southwood-avenue, for Messrs. Thomas & Sons; 2 shops and flats, Chipstead Valley-road, for Messrs. Stewart & Burrage; house, Bramley-avenue, for Mr. V. Herbert.

COVENTRY.—The T.C. has adopted a scheme for the provision of 2,200 houses during the next three years.

CROYDON.—The Electricity Commissioners have sanctioned a loan of £26,000 for show rooms and offices in High-street.—The Council proposes to ask the M.H. to hold an inquiry into the scheme for the purchase of land for the erection of baths at Addiscombe.—Heathfield Estate, adjoining Addington Hills, has been sold for building purposes.

DARLINGTON.—Plans passed by the T.C.: Two houses at Haughton-road, for Estate Agent, L.N.E. Rly. Co.; house, Cleveland-avenue, J. A. L. Robson; two houses, Haughton-road; three houses, Westlands-road; ten houses, Yarm-road; two houses, Pierremont-gardens; eight houses, The Fairway, J. E. Chilton; house, Pierremont-road, H. B. Richardson; five houses, Bowman-street, H. Parvin.—A new men's club and a large recreation room are to be erected at Cockerton.—Plans passed by the R.D.C.: Eight houses, Yarm-road,; house, Middleton-on-Row; two houses, Measham-road; two houses, Hurworth-road, Hurworth; two houses, Burtree-lane; lay-out plan for a building estate at Hurworth.

DARTON.—The U.D.C. approved plans for 250 houses to be erected near the Darton Main Colliery, by the Darton Housing Association, Ltd.

DERBY.—The T.C. propose erecting 239 houses.—Messrs. G. H. Wheatcroft & Co., of Wirksworth, have arranged to establish a textile factory at premises in Leaper-street.

DONCASTER.—The Housing Committee have considered tenders for the erection of 400 houses on the Warmsworth-road site.—Tenders are being invited for the extension to the premises of The Yorkshire Penny Bank, Ltd., at the corner of High-street and Scott-lane.—Demolition of old property in Scott-lane is now being proceeded with, and when the site is cleared a new shopping centre is to be erected of concrete construction. Plans have been prepared by Mr. T. W. Sharpe, architect, of Ravensthorpe.—A new secondary school is to be erected upon a site at the corner of St. Nicholas-road and Church Baulk, Thorne, for the E.C.—The Governors of the Infirmary have decided to erect their proposed new institution on a site in Thorne-road. Dr. MacIntosh, of the Western Hospital, Glasgow, is to be consulted on the construction and lay-out plans.

DOUGLAS (ISLE OF MAN).—Plans passed by the T.C.: House, Peel-road, for Mr. Ainley.

DOVER.—Detailed plans are to be prepared for a shelter at Granville-gardens, with seating for 700, and estimated to cost £2,500.

DRIFFIELD.—Plans have been prepared for the erection of a house, garage and engine house at Bridlington-road, and tenders for the work are being invited by the architects, Messrs. F. Mitchell & Sons, Upper Fountaine-street, Leeds.

DURHAM.—The R.D.C. approved plans: H. L. Gradon, house, at Whitesmocks, Durham; J. J. Scott, house, at Belmont; Trustees, United Methodist, chapel and school at Broompark.

EARSDON.—The U.D.C. has received sanction from the M.H. to build a further 66 houses, which will complete the Castle Park estate.

EASTBOURNE.—The B.S. has prepared a lay-out plan for a new depot at Bedfordwell-road. Plans passed: House, Le Brun-road, for Mr. H. Philbey; house, Willingdon-road, for Mr. T. Pain; house, Victoria-drive, for Mrs. M. Walker; two houses, St. Phillip's-avenue, for Mr. F. C. Benz; two houses St. Phillip's-avenue, for Mr. A. Ford; two houses and 10 garages, St. Phillip's-avenue, for Messrs. Llewellyn & Co.; house, Southfields-road, for Mr. F. G. Dyer.

EAST HAM.—Plans passed: Four houses, Melford-road, for Mr. Seymour; 14 houses, Cotswold-gardens, for Mr. F. Hamlett; 44 houses, Caulfield-road, for Messrs. Gale Bros.; house, Wellington-road, for Mr. G. Hansford; house, Elsenham-road, for Mr. Talbot.—A scheme for extensions at the dust destructor works, to cost £10,000, has been prepared by the Borough Engineer.—The T.C. is considering the provision of accommodation for 50 mentally defectives. Plans are to be prepared for extending the offices of the tramways department. Alternative plans are to be prepared for a convenience at Barking-road.

EAST STOW.—The R.D.C. have a proposal from Mr. G. A. Woodward to build five or six houses at Old Newton.—The Council has approved the filtration of the pond in the district for water supply.

EDGWARE.—Plans for over 200 houses have been passed by Hendon Council.

EDINBURGH.—Plans approved by the Dean of Guild Court: J. Stewart, cottage, Parkhead, Juniper-green; J. B. M'Kay, double villa at Barnton-avenue, Davidson's Mains; A. T. Wood, two semi-detached houses at Morningside-grove: J. B. Patrick, house, Barnton-avenue; A. Matthew, bungalow, off St. John's-road, Corstorphine; Incorporated Edinburgh Dental Hospital and School, new building at Chambers-street; T. S. Henderson, house, Hillview-terrace, Blackhall; A. Forbes, four bungalows, Hillview-terrace, Blackhall; C. Macandrew, Ltd., four houses, Craiglockhart Park.

EDMONTON.—The Middlesex C.C. is purchasing land required for the construction of a bridge across the Lea Navigation at Angel-road.

ELLESMERE PORT AND WHITBY.—The Housing Committee recommends that arrangements be made with Messrs. Gould, Ltd., to erect eight houses similar to others in course of erection on the gas works site, at £1,176 per block of two.

FELIXSTOWE.—The U.D.C. are to erect 38 houses on a plot of land in St Andrew's-road.

FOLKESTONE.—Plans passed by T.C.: Mr. O. Marx, house, Broadfield-road; Mr. A. Castle, house, Cherry Garden-avenue (Mr. J. L. S. Dahl, architect).

GELLYGAER.—The U.D.C. has asked neighbouring authorities to join in a scheme for the erection of a new isolation hospital.

GLAMORGAN.—Representatives of the University College of South Wales and Monmouthshire have waited upon the County E.C. requesting grants towards the maintenance of new physics and chemistry departments, to be erected at Cardiff, which total costs incurred, £250,000.—The Pontypridd U.D.C. are proposing to erect a bridge from the Park Cinema to the Park grounds.

GLASGOW.—Plans passed by the Dean of Guild Court: Victoria Infirmary, nurses' home and recreation rooms, Grange-road and Langside-road (the cost is estimated at about £15,000); J. Caldwell, five semi-detached villas, Langlands-road, Newlands; J. C. Lyle, eight houses, Fernleigh-road; Southern Building Co., 15 houses at Crompton-avenue and continuation of Woodend-avenue, Cathcart; Glasgow Corporation, houses at Hamilton Hill.—The Scottish Board of Health has sanctioned a two million loan for housing.—The Baptist Union has selected a site at Corkerill-road for the erection of a church.

GOSPORT.—The T.C. is considering the purchase of land, at a cost of £10,500, for the development of Stokes Bay.—Efforts are to be made to purchase a site in the King's-road district for a children's playground.—The B.S. has prepared a lay-out of the esplanade at the Hard.—Plans passed: Five houses, Grove-road, for Mr. W. G. Roberts; house, Bridgemary, for Mr. H. Tribbeck; 10 houses, Melville-road, for Mr. A. Monkton; house, Privett-road, for Mr. T. Taylor; house, Brockhurst-road, for Mr. C. Howard; house, Grove-road, for Mr. W. A. Withers; house, Elson-road, for Miss Pellatt; house, Grove-road, for Mr. W. Hetherington; house, Algesey-road, for Messrs. Northcott & Pile.

HADHAM.—The R.D.C. passed plans: Pair of cottages at Much Hadham, for the Herts C.C.; bungalow, Braughing, for Mr. Rogers.

HALIFAX.—The Halifax Ind. Co-operative Society, Ltd., have purchased St. Paul's Church schools, and it is proposed to build new stores on the site.

HANWELL.—Plans passed by U.D.C.: House, Hume-avenue, for Mr. T. R. Pettifer; house, Hume-avenue, for Mr. E. Coventon.

HARROGATE.—The Borough Engineer has been instructed to prepare a plan of the lay-out for the erection of 200 new houses on the Ripon-road Farm.—The rebuilding of the Magnesia Well pump room, in the Valley Gardens, is to be carried out in conjunction with the erection of a covered promenade near the bandstand. The Borough Engineer has been instructed to prepare a plan and estimate of the cost.

HARTLEY WINTNEY.—Hampshire C.C. has purchased a site for a new school.

HASLAND.—An inquiry has been held by the M.H. into the scheme for the erection of public baths at Storforth-lane. The total cost is estimated at £8,000, towards which the Miners' Welfare Fund will contribute £3,000. Plans have been prepared by Messrs. Wilcockson & Cutts, of Chesterfield, the contract for the building work having been provisionally placed with Messrs. P. & W. Anderson, Ltd.

HAZEL GROVE.—Plans approved: House, Chester-road, for Mr. R. G. Burrow; house, Grange-road, for

* See also our List of Contracts, Competitions, etc.

Mr. R. Stockton; house, Pownall-avenue, for Mr. T. J. Oldham; house, Carr Wood-road, for Mrs. E. G. Crosby.

HEATLEY.—Considerable extensions are proposed by the Hampshire C.C. to the Bordon school.

HEBBURN.—The U.D.C. are to erect 37 houses.

HESTON AND ISLEWORTH.—The U.D.C. passed plans: Mr. A. C. Hodges, two detached houses, The Grove; Mr. J. P. Power, two houses, London-road; Mr. C. T. Cushing, house, Alexandra-road; Mr. H. B. Phillips, two houses, Standard-road; Mr. W. Harris, four houses, Denbigh-road; Mr. P. H. Watkins, two houses, Martindale-road: Messrs. Cartwright & Son, house and two shops, Whitton-road; Mr. T. H. Revis, house, London-road: Messrs. P. Chase Gardener & Co., eight houses, Tiverton-road: Messrs. P. Chase Gardener & Co., eight houses, Standard-road: The Glenwood Construction Co., 18 houses, Smoky-lane; Mr. R. Willison, house and outbuilding, Heston-road; Messrs. Dodge & Reid, two houses, Jersey-road.

HITCHIN.—The R.D.C. approved plans: Bungalows at Weston, Todds Green, and Rabley Heath; a pair of cottages at Newnham: two cottages at Stockens Green, Knebworth: four cottages at Stagenhoe Park; and a cottage at Broom Barn.

HOUGHTON-LE-SPRING.—The U.D.C. has obtained sanction to proceed with 36 houses on the Hetton-road site.

HOVE.—The T.C. have received the Ministry approval to the erection of 164 houses required to complete the Old Shoreham-road estate scheme. The Borough Surveyor has submitted for approval a plan showing the proposed arrangement and types of houses to be erected.

HUCKNALL.—The U.D.C. approved plans for 10 houses.

ILFORD.—The U.D.C. is to erect 12 houses on land near the electricity works, at a cost of £8,400.—The M.H. has now sanctioned the scheme for the erection of a central library, and the surveyor is to prepare plans.—Plans passed: Five houses, Hatch-lane, for Mr. W. Butcher; 18 houses, Kingston-road, for Sunnyside Development Syndicate; four houses, Breamore's-road, for Messrs. Harber & Cox.

ILKESTON.—Plans passed by T.C.: Two houses, Manor-road, for Messrs. Briggs & Co.; two houses, Wharncliffe-road, for Mr. F. Chambers; house, Drommond-road, for Mr. Godber; bungalow, Manor-road, for Mr. J. Smith.

KEIGHLEY.—A number of slum houses are being abolished at Keighley, and 536 persons are to be accommodated in new houses.—The F.C. are to erect lavatories at the corner of Lord and Cavendish streets. Plans passed by T.C.: Three houses, Park-lane, for Mr. L. Whittaker; bungalow, Spring-gardens-lane, for Mr. W. H. Collingham.—Plans passed by R.D.C.: Four houses, West Bank, Riddlesden, for Mr. H. Anderson; three houses, Sun-street, Eastburn, for Mr. T. Atkinson.

KIVETON PARK.—The R.D.C. decided to seek tenders for the erection of 28 houses at Kiveton Park and Wales.

KNARESBOROUGH.—Plans passed by the U.D.C.: House, in Scriven-road, for Mr. G. E. Arnold.—The Council is to apply to the M.H. for sanction to borrow £12,000 for the construction of 24 dwellings in Stockwell-avenue.

LEATHERHEAD.—The U.D.C. has appointed a sub-committee to consider the question of town planning the district.

LEEDS.—The T.C. passed plans: Mr. W. Teal, bungalow, Cambridge-gardens estate; Mr. A. Booth, 16 semi-detached houses, Old-lane, Beeston; Mr. C. Smith, five houses, Chandos-place, Lidgett-lane; Mr. W. C. Rogers, six semi-detached houses, East Moor-crescent. Roundhay; Mr. E. B. Verral, bungalow, Stainbeck-lane, Chapeltown; Mr. W. Short, detached house, Old-lane, Beeston; Mr. W. Teal, two semi-detached bungalows, Cambridge-gardens estate.

LEICESTER.—The T.C. proposes the acquisition of a site in Aylestone-drive for a transformer house.

LOFTUS.—Members of the Roman Catholic Church are launching a scheme for the erection of new church premises, in West-road.

LONDON (CITY).—The Corporation have approved the application of Messrs. Ellis & Clarke for erection of a building to abut Tudor-street, Whitefriars-street, and Glasshouse-alley.

LONDON (FULHAM).—Plans agreed: Buildings at 632 to 638, Fulham-road, for Mr. J. H. Puttick; buildings on a site in Roxby-place, for Messrs. Jones & Sons, Ltd.

LONDON (ISLINGTON).—The B.C. is to convert the "Beehive" public house in Eden-grove into a garage for the Electricity Department, at a cost of £1,700.

LONDON (LAMBETH).—The L.C.C. recommend the borrowing by the B.C. of £56,316 for housing purposes.

LONDON (LEWISHAM).—Plans passed by B.C.: Ten houses, Bovill-road, for Messrs. Ensmore Bros.; 10 houses, Casslee-road, for Messrs. Middletons, Ltd.; seven houses, Calmont-road, for Messrs. Dobden & Co., Ltd.; pavilion, Bromley-road, for Mr. E. Watt; two houses, Cranston-road, for Messrs. Laxton & Sons; two houses, Canonbie-road, for Messrs. Osborne & Son; house, Baring-road, for Mr. W. Stevens; five houses, Manor-lane, for Messrs. Scudamore, Ltd.

LONDON (MARYLEBONE).—It is proposed to construct an arcade from Bell-street to Edgware-road.

LONDON (POPLAR).—The B.C. proposes the purchase of a site at Cubitt Town for £4,750 for the erection of 71 houses.—The Libraries Committee recommends the purchase of two houses adjoining the Bow library for extensions.

LONDON (PUTNEY).—The railway bridge is to be widened, at a cost of £10,500.

LONDON (SHOREDITCH).—The L.C.C. Education Committee proposes to proceed with the erection of an elementary school for 1,000 at Crondall-street.

LONDON (STOKE NEWINGTON).—The L.C.C. intends to erect an elementary school in Albion-road.—Plans sanctioned: Rebuilding "Red Lion" public house, Church-street, for Messrs. Truman, Hanbury, Buxton & Co.; two houses, Woodberry-grove, for Mr. H. White.—Eight tenders have been received for the erection of the library extension, but the Library Committee cannot recommend any as the cost is in excess of the estimate.

LONGTON.—Plans passed by Stoke-on-Trent T.C.: Bungalow, Weston-road, for Mr. T. Fell; house, Star and Garter-road, for Mr. W. Leese; house, Star and Garter-road, for Mr. A. Vass; two houses, Star and Garter-road, for Messrs. Vernon & Clewes; house, Rough-close, for Mr. W. Edwards; two bungalows, Weston-road, for Messrs. Caulcott & Son.

LUTON.—The B.S. has prepared a scheme for reconstructing the sewage pumping station, to cost £41,000.

LYTHAM ST. ANNE'S.—The Corporation propose to erect houses near the site of the new gasworks at Eastham, for their employees.—Plans for the erection of 56 houses have been approved.

MAIDSTONE.—The Council recently approved of the grant of the subsidy in respect of six houses and two bungalows.

MANSFIELD.—Notts County E.C. has authorised the preparation of plans for a technical school on the Ashfield House site. The new school will embody the mining department, towards which a grant of £9,700 has been promised by the Miners' Welfare Fund.

MELTON.—The R.D.C. passed plans: Two houses at Sewstern, for the Stanton Ironworks Co.

MEXBOROUGH.—The E.C. has asked the West Riding C.C. to provide a new central school.

MIDDLESBROUGH.—The sum of £6,000 is to be spent for extensions to the children's ward of the North Riding Infirmary.

MILE CROSS.—The Norwich E.C. recommend that public notice be given of the intention of the Local Education Authority to provide a new public elementary school for about 600 children.

MORECAMBE.—Plans passed: Two houses, South-road, for Mr. W. H. Walker; house, Lancaster-road, for Mrs. Crowther; house, Lancaster-road, for Mrs. Drake; house, Woodhill-lane, for Mr. Johnstone; two houses, Thornton-road, for Mrs. Hunt; two houses, South-road, for Mr. H. L. Moody; 48 houses, Silverdale-street, for Messrs. Edmondson Bros., Ltd.; house, South-road, for Mr. R. Cocking.—The T.C. has agreed to carry out suggestions by the B.S. for using the Morecambe-street offices by the Education Department.

NELSON.—Work is being proposed by the T.C. in the construction of public abattoirs.

NETHER WALLOP.—Hampshire C.C. has decided to erect a school for about 120 children.

NEWBIGGEN (NORTHUMBERLAND).—The Co-operative Society has adopted a building scheme for the erection of 250 houses.

NEWBURY.—The T.C. passed plans: House, Essex-street, for Mr. H. Cook; club room, Bartholomew-street, for Church Army.

NEWPORT (MON).—The B.C. is to apply for sanction to acquire 25, 27, 29 & 31, Stow-hill, for extending the municipal secondary school.—The Council is to extend the Spring-gardens school.—The Llanover Estate is to have new offices erected in Fields-road.

NEW MALDEN.—Plans passed by Maldens and Coombe U.D.C.: Four houses, South-lane, for Mr. R. Thomas.—The Surrey C.C. is to be urged to provide a secondary school in the district.

NORTHAMPTON.—Plans passed by T.C.: House, Park-avenue South, for Mr. J. M. Read; house, St. George's-avenue, for Dr. Brown; two houses, St. George's-avenue, for Mr. A. Holloway; house, Delapre-crescent, for Mr. E. H. Tibbs; two houses, Linden-road, for Mr. F. Jordan; house, The Avenue South, Dallington, for Mr. F. H. Allen; house, Beech-avenue, for Mrs. Harland; detached house, St. George's-avenue, for Mr. Hamp; 5 houses, The Broadway, for Messrs. S. G. Sale & Co.; house, Kingsthorpe-grove, for Messrs. A. L. & H. W. Chown; 8 houses, Linden-road, for Northampton Co-operative Society, Ltd.; 4 houses, Linden-road, E., for Mr. C. H. Rainbow.—The C.C. has appointed a committee to prepare a comprehensive scheme for office accommodation.

NORTHALLERTON.—The U.D.C. are to build houses and sell them on the hire purchase system. A contract for 20 houses has been signed.

OSWALDTWISTLE.—Plans passed: Six houses, Margaret-street, for Mr. W. Clegg; reconstruction of two houses, Riley Mount, for Mrs. Crankshaw.

OXFORD.—It is proposed to rebuild the "Duke of York" public house in Union-street.—It is not proposed to proceed with a scheme for a municipal swimming bath, but negotiations are suggested to take over the Merton-street baths from the University College.—Plans have been passed for the lay-out of the Gipsey-lane housing site.—The Iffley Glebe land is to be purchased for £4,870, as a housing site.—The Corporation is negotiating with the Midland Bank, which proposes a lease of Sun Vaults and to spend £6,000 on reconstructions, &c.—The T.C. approved the plans of the lay-out of the Gipsy-lane site and the Meadow-lane site, and that application be made to the M.H. for sanctions to loans of £21,485 and £13,400 for the cost.

PAISLEY.—The Court passed plans for six blocks of three-story tenements at the junction of Inchinnan and Springbank roads; two bungalows at Balgair-drive, Arkleston, by Mr. J. Manweil.

PETERBOROUGH.—Plans passed: Four houses, Fairfield-road, for Messrs. Corner & Camplon; house, Granville-road, for Mr. Ellington; house, Grange-road, for Mr. J. Robinson; house, Grange-road, for Mr. A. Maycock; house, Blinco-road, for Mr. Stanland; shops, &c., Mansion House site, for Mr. G. C. Fitzwilliam; compressor shed, Wagon works, for Moy's Wagon Co.; 2 houses, Dogsthorpe-road, for Mr. Jellings; 2 houses, Stone-lane, for Mr. Langsley; house, Alexandra-road, for Mr. J. A. Lee.—The B.S. is to prepare plans for as many houses as possible on sites at Orchard-street, Queen's-walk, and South View-road.

PLYMOUTH.—The T.C. recommend tenders to be invited for the erection of houses in brick or concrete in various numbers up to a total number of 800.—The T.C.'s Borough Surveyor submitted a plan for adapting "Stonehall," which the Council recently decided to purchase, for the purpose of providing housing accommodation.

PONTEFRACT.—Plans passed: New slaughterhouse at Newtown, for the Pontefract Industrial Co-operative Society, Ltd.; bungalow, Fairy-hill, for Mr. T. Fox.

PORTSMOUTH.—The Camber and Dock Committee recommends granting a lease to the Redline Motor Spirit Co., Ltd., of a site at the Camber, for the erection of a store.—Having interviewed Mr. Stephen Ayling, F.R.I.B.A., as to the provision of public lairage and abattoir accommodation, the Health Committee has called for the preparation of a detailed scheme.—Electricity extensions to Hayling, Rowlands Castle, Stubbington and Horndean are recommended, at a cost of £39,000.—Plans have been approved for the construction of a wind screen on the pier, with a roof, to cost £1,100.—Plans passed: Re-building Nos. 86-88, Fratton-road, for Messrs. Hobbs & Cestere, 79, Kimbolton-road, for Mr. J. Brittan; 6 houses, Kimbolton-road, for Mr. C. Brittan; two houses and shops, Priory-road, Milton, for Mr. C. Brittan; house, Havant-road, Cosham, for Mr. A. J. Chase; two houses, Newcome-road, for Messrs. E. & A. Sprigings; additions, 184, Dover-road, for Messrs. C. W. Stigant & Son; business premises, High-street, Cosham, for Mr. C. E. Fritchley.

PRESTON.—Sanction is to be sought for subsidy for an additional 100 houses.—The Finance Committee has approved plans and estimates for the improvement of the river bank, at a cost of £27,000.

PURLEY.—Plans passed by U.D.C.; house, Burcott-road, for Mrs. Baddeley; club room, Lower-road, for British Legion.

REDCAR.—The B.E. has approved plans for the erection of a new permanent council school at Dormanstown, and are prepared to sanction the expenditure involved, at an estimated cost of not more than £9,500. Accommodation will be provided for 300 mixed scholars and 136 infants.—The T.C. proposes to erect an infectious diseases isolation hospital near Tell Bridge-lane Marshes.

ROCHDALE.—Plans were approved for two houses in Oldham-road.

ROSSINGTON.—The West Riding E.C. have decided to build four houses for teachers of Rossington Council school, at a cost of £3,175.

RUSHDEN.—Northampton C.C. is considering the erection of a central school.

SANDERSTEAD.—Plans passed by U.D.C.: House, Arkwright-road, for Mr. W. L. Horwood; house, Arkwright-road, for Mr. Wildman; two houses, Florence-road, for Mr. R. C. Barwood; house, Ridgway, for Mr. A. Rowsell.

SCALBY.—Plans passed: Two bungalows, for Mr. Hudson; bungalow, at Cross-lane, for Mr. Tymon; bungalow, at Cross-lane, for Mr. Waite; house, for Mr. F. Dixon.

SEAHAM HARBOUR.—Premises at the rear of the "Londonderry" Hotel are shortly to be reconstructed.—The Surveyor is to report as to the improvement of the drainage system from the Ropery subway to the dock.—A committee is to report on the erection of a model lodging house.—The U.D.C. is seeking sanction to grant subsidies for 54 houses to be erected near Princess-road.—The County Education Committee has decided to provide a new elementary school and to enlarge the Upper Standard school.—In view of the necessity for alterations and extensions to the Council offices, negotiations are taking place respecting the adjoining premises.

SELGEFIELD.—The R.D.C. has decided to erect 300 houses.

SHARLOW.—The R.D.C. propose reconstructing Spondon Canal Bridge.

SHEFFIELD.—The trustees of the Brunswick Wesleyan Chapel are considering the question of carrying out a scheme for erection of new Sunday schools.—The Yorkshire Penny Bank, Ltd., has acquired premises at the corner of Commercial-street and the Haymarket, upon which they propose to erect a new branch bank. A site has also been acquired by another banking company on the corner of Rockingham-street and The Moor, upon which new banking premises are to be erected.

SHILDON.—The U.D.C. is considering the advisability of erecting a new rest house in the recreation ground, or carrying out extensions to the existing building.

SHIPLEY.—The U.D.C. proposes the erection of a smallpox hospital at Heaton Royds, at a cost of £5,600. Plans passed: Pavilion, Thackley-road, for Windmill Cricket Club; 26 houses, Gaisby-lane, for Mr. Dalby; house, Glenview-road, for Mr. E. Wright.—It is proposed to purchase a house in Farr-road for conversion into a Child Welfare Centre. The Surveyor is to prepared plans for houses on the Albert-road estate, the lay-out allowing for 196 houses.

SHREWSBURY.—The T.C. has prepared a scheme for the erection of 70 houses. A house is to be erected at the waterworks at a cost of £600.

SIDMOUTH.—The U.D.C. is considering the erection of houses.

SKEGNESS.—The T.C. received plans for a large block of properties proposed to be erected on the South-parade, comprising an auction mart, garage, 10 lock-up shops, &c.

SOUTON.—The Devon E.C. is discussing with the managers a site for a new school.

SOUTHEND-ON-SEA.—Plans passed by the T.C.: Shop, Tyler's-avenue, Mr. Sims; house, Westbury-road, A. Johnson; two shops, London-road, A. D. Martin; shop, Scarborough-drive, A. D. Martin; mission hall, rear of Bournemouth Park-road, Church of St. Mary the Virgin; two houses, Daines-way, Southend-on-Sea Estates Co.; bungalow, St. George's Park-drive, Miss A. Sargeant; bungalow, Parkanaur-avenue, H. J. Manners; house, Western-esplanade, R. T. Howard; two houses, Silverdale-drive, J. French;

two houses, Eastwood-road, Leigh, J. Snell; four flats, Elmsleigh-drive, G. Spurgeon; house, Bonchurch-avenue, G. Wood: four bungalows, Northavenue, A. Johnson; ten bungalows, Daines-close, Thorpe Bay, F. W. Goldsworthy; four houses, Fairmead-avenue, G. Payne; two houses, The Ridgeway, R. T. Howard; house, Colbert-avenue, S. M. Derrick; Church hall, Bournemouth Park-road, Trustees of Congregational Church; bungalow, Burlescombe-close, F. W. Goldsworthy; two houses, Elm-grove, Mrs. K. Sumner; four houses and two maisonettes, Prittlewell-chase and Welsted-gardens, C. Neil; two shops and houses and six garages, London-road, A. D. Martin; two houses, Hadleigh-road, Leigh, S. F. Johnson; two shops and houses, London-road, A. D. Martin; three houses, Station-road, A. Hood.

SPOTLAND.—The Manchester Consistory Court has granted a faculty for placing a reredos in St. Clement's Church.

STAINFORTH.—Plans have been prepared for a new Wesleyan Chapel at Stainforth, at an estimated cost of £9,000.

STOCKTON.—The Borough Engineer has submitted an estimate of £12,567 for the provision of new accommodation at the Isolation Hospital.—The question of providing a public abattoir has been discussed, and the Medical Officer has been requested to supply details as to cost.

STOKE-ON-TRENT.—A foundation stone has been laid in connection with the extension of St. Peter's Girls' and Infants' school.

STOURPORT.—The superstructure of the large electricity generating station at Stourport, Worcs, for the Shropshire, Worcestershire and Staffordshire Electric Power Co., is to be commenced shortly. The plans have been prepared by Mr. J. T. H. Legge, of the Power House, Smethwick, the Company's Engineer, and Mr. C. W. G. Little, 88, Kingsway, London, W.C., Engineer to the British Electrical Federation.

SUNDERLAND.—A commencement has been made with the erection of a new parochial hall for St. Benet's Church, Sunderland. Mr. M. McGlynn, of Pallion, Sunderland, is the builder, and Mr. W. Dent, of 59, Frederick-street, Sunderland, is the architect, and it is intended to erect a two-story building which will provide a billiard room, men's club, reading room, and concert room to accommodate 400, with dressing rooms and stage. The cost will be about £3,000.—Mr. W. Dent has prepared plans for the alteration of the Electric Theatre, South Hylton, Sunderland, into a billiard hall.

SUTTON-IN-ASHFIELD.—Notts County E.C. has purchased a site at a cost of £1,568 for the erection of a secondary school.

SWANSEA.—The T.C. Estates Committee is leasing a site at Sketty-avenue to the Trustees of Glamorgan Presbytery, for the erection of a church.—Revised plans are to be prepared for the proposed central school.—The Libraries Committee is considering a scheme for the erection of a public hall and institute at Fforestfach.—Details are being considered regarding proposals for branch libraries at Landere, Mumbles and Llansamlet.—Plans passed: Two houses, Tycoch estate, for Messrs. Rogers & Davies; bungalow, Pentregethin-road, for Mr. R. B. Mansfield; bungalow, Pentregethin-road, for Mr. E. A. Medland; bungalow, Tycoch estate, for Mr. A. B. Fursland; bungalow, Tycoch estate, for Mr. J. W. Holland; two houses, Cecil-street, for Mr. J. O. Watkins; two houses, St. Peter's-road, for Mr. E. Davies.

SWANAGE—The U.D.C. have received the M.H. approval to erect 30 further houses on the existing site at Herston. The Surveyor is to prepare and submit to a future meeting, sketch plans of a suitable type of house for erection in pairs, with an estimate of the cost per house.

THIRSK.—In connection with the Thirsk Institute a new institute is to be erected, for which plans have been prepared and tenders are to be invited.

TONBRIDGE.—The U.D.C. approved the purchase of a site at Cage Green, Shipbourne-road, and the erection of 40 houses.

TORQUAY.—Plans approved by the T.C.: Pair of houses, Teignmouth-road, for Mr. E. Lax; house, Lincombe-drive, Mrs. Rexherd; house, Teignmouth-road, Mr. F. B. Wilkins.—The T.C. has decided to proceed with the complete scheme of sea defence works to Corbyn Beach.—The conveniences at the old Town Hall and Babbacombe Downs are to be reconstructed at a cost of £1,300.—The B.S. has prepared plans for extensions to the cafe kitchens at a cost of £3,000.—Mr. G. H. Widdows, F.R.I.B.A., has been appointed architect to prepare plans for the new school at Westhill.

TREDEGAR.—The L.M. & S. Railway Co. has informed the U.D.C. that it hopes shortly to commence building a new railway station at Tredegar. In addition, the Company is considering provision of better station accommodation at Nantybwch, and covered shelters at various workmen's platforms.

TYNEMOUTH.—A further instalment of the quay extension is to be carried out at a cost of about £12,000. The Housing Committee has authorised the preparation of plans for 24 blocks, each comprising four maisonettes of a superior character to be erected at Balkwell.

WAKEFIELD.—The T.C. is asking the M.H. to sanction 20 experimental houses costing £8,695.

WANDSWORTH.—The B.C. is arranging for the preparation of a lay-out plan, &c., for the development of land in Blackshaw-road. It is proposed to erect two-story self-contained flats.—The B.C. is to assume control of Streatham-green, and proposes to construct sanitary conveniences thereon, at a cost of about £2,400.—The B.S. has been authorised to carry out road works to cost £50,000.—The Cemeteries Committee is to secure designs and estimates for a shelter at the Putney Vale cemetery.—The B.C. is asking the L.C.C. to prepare a town-planning scheme for the area near the railway at Streatham.—The Housing Committee is formulating further schemes for the erection of houses on undeveloped housing estates.—Plans have been prepared for flats to be erected on land at Blackshaw-road.—Plans passed: Seven houses, Grove-road, for Messrs. R. Bilham & Son; house, Streatham-common, for Messrs. J. Potterton & Sons; four shops, Streathamvale, for Messrs. Chapple & Fulford; four houses, Upper Tulse-hill, for Mr. W. H. Davies.

WARRINGTON.—In connection with the suggested extension of the Whitecross Poor Law institutions, the B.G. are negotiating with the Corporation for land in Lovely-lane.

WARWICK.—Plans passed by the T.C.: Two houses, Beauchamp-road, for Messrs. Crosbee & Atkins; house, Brook-street, for Mr. Alcock.

WATH-ON-DEARNE.—Application has been made to the M.H. for sanction to borrow £1,800 for the improvement of the water supply.

WEARDALE.—The R.D.C. has passed plans, submitted by Mr. Geo. Thompson, for the erection of an auction mart at St. John's Chapel.

WELLINGTON.—The U.D.C. passed plans: House, at Seymour-street, for Mr. E. Hookway; and a bungalow at Ford-street, for Mr. Gray.

WEMBLEY.—Another secondary school is to be erected.

WESTGATE.—Wiltshire C.C. has a scheme for the acquisition of the Leighton House grounds of 50 acres, and proposes to erect an institution for mental defectives. It is suggested that accommodation should be provided for 540 patients. The cost is estimated at £90,000.

WEST HARTLEPOOL.—The Corporation has received permission from the M.H. for the immediate erection of 100 houses on the Raby Estate.

WESTON-SUPER-MARE.—Formal consent of the M.H. had been received by the U.D.C. to the appropriation of four acres of land in Bridge-road for the erection of 50 workmen's houses. Plans and specifications were practically completed and the surveyor was instructed to obtain tenders.

WHITBY.—A scheme of extensions are to be carried out at the Council offices, at an estimated cost of £2,200.—Plans passed: Four houses at Stakesby; two pairs of semi-detached houses at Stakesby.

WHITLEY.—Plans passed: Two houses, Evesham-avenue, for Mr. Mather; house, Grange-park, for Mr. S. J. Short; three houses, Evesham-avenue, for Mr. J. M. Dawson; two houses, Uplands, for Mr. Dodsworth; house, Davison-avenue, for Mr. J. M. Dawson; house, Monks-road, for Mr. G. Wilkinson; house, Uplands, for Miss Minnis.

WILTS.—The E.C. propose subject to the approval of the C.C., to provide new elementary schools at Devizes (cost £10,500), Bradford-on-Avon (£4,050), Calne (£6,000), and Bratton (£2,430).

WIMBLEDON.—It is proposed to erect conveniences in Haydon's-road recreation ground and Garfield-road recreation ground.—A site is to be secured for the erection of a day nursery.—Plans passed: House, Dora-road, for Mr. R. Sharp; house, Conway-road, for Messrs. Whitehead & Co.; house, Cottenham Park-road, for Mr. Walker; house, Ridgway, for Mr. A. V. Farrier.

NEW BUILDINGS

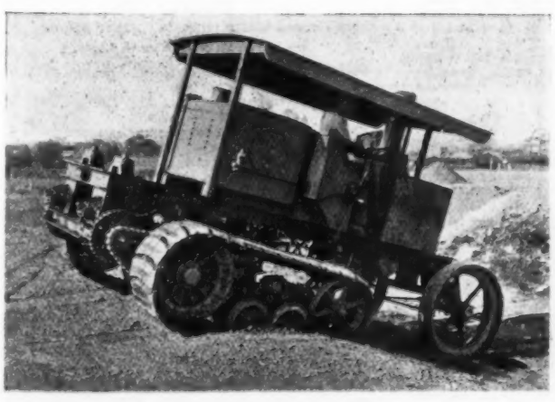
Wembley.—Building operations are in progress in connection with the new Wesleyan Methodist Church at Wembley. The new building has been designed to seat about 600, and will be carried out in brick, relieved with stone dressings for windows, door linings, &c. The floors will be of wood blocks, whilst a heating and electric lighting system will be installed. The contractor is Mr. Thos. Shillitoe, of 3, Electric-parade, London, N.3. The architect is Mr. A. E. Lambert, of 28, Park-row, Nottingham.

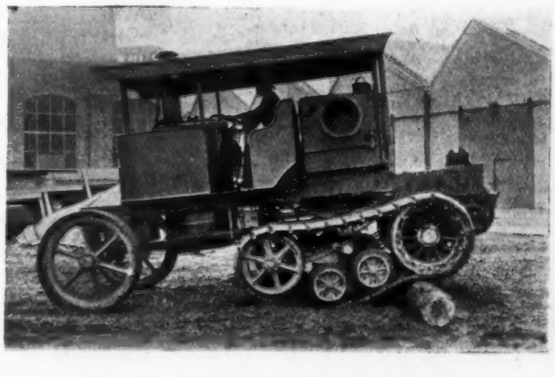
Westcliff-on-Sea.—A new church and school are to be erected at Crowstone, for the local congregational community. The edifice will be built of local brick with stone dressings, and will accommodate about 500–600 persons. The architects are Messrs. George Baines & Son, F.R.I.B.A., of 121, Victoria-street, London, S.W.1. The builders are Messrs. J. Jarvis & Sons, Ltd., of 8, Wormwood-street, London, E.C.2.

Bushey, Herts.—The governors of the Royal Caledonian School at Bushey, Herts, have under consideration the erection of additional buildings in order to augment the recreation room and workshop facilities of the school. The new premises will be erected to a design in conformity with the present buildings, and the plans are now being prepared. The architect is Mr. F W. Troup, F.R.I.B.A., of 14, Gray's Inn-square, London, W.C.1.

A NEW ROADLESS TRACTOR

AT a largely attended demonstration at Shrewsbury last week, the capabilities of a new production of the "Sentinel" Waggon Works, Ltd., a roadless tractor, was shown in a practical manner. The tests carried out showed the tractor surmounting tree trunks, going up inclines, through ponds, and hauling on a muddy and slippery road. As a timber hauler, its usefulness was demonstrated by a cinema display, in which the tractor was seen loading and hauling felled timber through a slippery and muddy woodland, where a grip of the surface appeared impossible. Colonel Clarke explained the mechanism of the tractor, and the following tests were undertaken: Demonstration of tractor drawing a large load; climbing and descending steep hills; slow demonstration of the movement, of the tracks, and control of the vehicle; demonstration of silence of tractor on hard roads; going through ponds; demonstration of the action of the track in swallowing up obstacles and the swivelling action of the front axle; demonstration of turning radius and of drawback pull, by means of a dynamometer. The whole of the tests, though severe, were successful. The tractor is 7½ ft. long. Illustrated and descriptive booklets of the technical details of this new "Sentinel Roadless" Tractor can be obtained from the Sentinel Waggon Works, Ltd., Shrewsbury.





A New Roadless Tractor.

PRICES CURRENT OF MATERIALS

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 3 6
Second Hard Stocks	3 18 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Fjettons, at		Best Blue	
King's Cross	2 13 3	Pressed Staffs.	9 5 0
Do. grooved for plaster	2 15 3	Do. Bullnose ..	9 15 0
Do. Bullnose ..	3 8 3	Blue Wire Cuts	7 5 0

Best Stourbridge Fire brick :—

2½ in.	8 11 0	3 in.....	10 3 0

GLAZED BRICKS—

Best White Ivory, and Salt Glazed Stretchers ..	23 0 0	D'ble Str'tch'rs	31 10 0
		D'ble Headers	28 10 0
		One Side and two Ends ..	32 10 0
Headers.....	22 10 0	Two Sides and one End	33 10 0
Quoins. Bullnose and 4½in. Flats	29 10 0	Splays and Squints	31 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super	2 1	3 in. per yd. super	2 11
2½ in. "	2 6	4 in. "	3 6

	s. d.	
Thames Ballast	10 6	per yard.
Pit Sand	3 9	" "
Thames Sand	11 6	" "
Best Washed Sand.....	14 6	" "
¾ in. Shingle for Ferro-Concrete	12 9	" "
¼ in. "	14 0	" "
¼ in. Broken Brick."	11 6	" "
Pan Breeze	7 6	" "

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

Best Portland Cement, British Standard Specification Test £2 18 0 to £3 3 6 51/- alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above.....	0 10 0
Super Cement (water proof).....	4 8 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White.....	5 15 0
" " Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	5 12 0
Sirapite, Coarse	3 9 0
" Finish	3 17 0
Grey Stone Lime	2 11 9
Chalk Lime	2 11 9
Best Ground Blue Lias Lime.....	2 4 6
Hair	17 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	2 9½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube.....	2 11½
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube.....	4 4
Do. do. delivered on road wagons at above stations, per ft. cube.....	4 5

White basebed, 3d. per ft. cube extra.

NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

HOPTON-WOOD STONE.

Delivered at any Goods Station, London.

Small random blocks, up to 10 ft. cube. Per ft. cube	7/-
Random blocks from 10 ft. and over "	17/-
Sawn two sides "	27/-
Sawn three or four sides "	32/-

YORK STONE, BLUE—*Robin Hood Quality.*

Delivered at any Goods Station London.

	s. d.
6 in. sawn two sides landings to sizes (under 20 ft. super.).....Per Ft. Super	5 6
6 in. rubbed two sides, ditto..... "	6 0
3 in. sawn two sides slabs (random sizes) .	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... "	1 6½
1½ in. to 2 in. ditto, ditto ..... "	1 4

HARD YORK—

Delivered at any Goods Station London.

Scappled random blocks.....Per Ft. Cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super.).....Per Ft. Super	5 1½
6 in. rubbed two sides ditto ..... "	6 1½
4 in. sawn two sides slabs (random sizes) "	2 10
3 in. ditto. ditto "	2 1½
2 in. self-faced random flags..Per Yard Super	9 0

ARTIFICIAL STONE.

Delivered in London Area in full van loads, per ft. cube :—Plain, 6s. 6d. ; Moulded, 7s. 9d. ; Cills, 8s. 3d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£32 0	3 × 6	£23 0
4 × 9	28 0	3 × 11	28 0
4 × 8	26 0	2 × 11	28 0
4 × 7	24 0	3 × 9	26 0
3 × 8	24 0	2½ × 9	26 0
3 × 7	23 0	3 × 4½	24 0
2½ × 7	24 0	3 × 4	24 0

PLANED BOARDS.

1 × 11	£34 10	1 × 9	£32 0

WOOD (*Continued*).

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅜	21/-	1¼	32/6
½	23/-	1½	37/6
1	25/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.	Inches.	per sq.
1	25/-	⅜	16/6
1¼	32/6	½	20/-
1½	37/6	⅝	25/-

MATCHINGS (BEST).

BATTENS

Inches	s. d. per 100 ft.
¾ × 2	2 6

SAWN LATHS.

Per bundle				0 2	6
Dry Wainscot Oak, per ft. super, as inch	0 2 0	to	0 2	6	
¾ in. do. do.	0 1 6	to	0 2	0	
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 1 9	to	0 2	6	
Cuba Mahogany	0 3 0	to	0 3	6	
Teak (Rangoon, Moulmein or Java), per ft. cube	0 14 0	to	—		
American Whitewood planks, per ft. cube ..	0 12 0	to	0 14	0	
Best Scotch Glue, per cwt.	4 10 0	to	—		
Liquid Glue, per cwt. ..	4 7 0	to	5 10	0	

SLATES.

1st quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12.....	37 12 6	18 by 10	21 2 6
22 by 12	34 0 0	18 by 9.....	18 12 6
22 by 11.....	31 5 0	16 by 10	17 12 6
20 by 12.....	29 15 0	16 by 8	13 15 0
20 by 10.....	25 12 6		

TILES.

Per 1,000 f.o.r. London.

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district	5 12 6
Ditto hand made ditto	5 17 6
Ornamental ditto	6 2 6
Hip and valley tiles (Hand made	0 9 6
(per dozen) (Machine made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	13 10 0
Plain Compound Girders	15 10 0
Stanchions	17 10 0
In Roof Work	20 10 0

MILD STEEL ROUNDS.

To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	16 10 0	⅝ in. to ¾ in...	13 10 0
½ in.	14 10 0	¾ in. to 2½ in...	13 0 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes. All sizes.	Fittings. ½"&up.	Fittings. ¼"to¾"	Flanges ½"&up.	Flanges ¼"to¾"
		inclusive.	inclusive.	inclusive	inclusive
Black Gas....	50 %	50 %	47½ %	60 %	57½ %
Blue Water ..	45 %	45 %	42½ %	55 %	52½ %
Red Steam ..	40 %	40 %	37½ %	50 %	47½ %
Galv'd Gas ..	35 %	40 %	37½ %	50 %	47½ %
" Water.	28½ %	35 %	32½ %	45 %	42½ %
" Steam	22½ %	30 %	27½ %	40 %	37½ %

C.I. HALF-ROUND GUTTERS—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.....	1/1½	11d.	3½d.
3½ in.	1/2½	1/0½	3½d.
4 in.....	1/4	1/1½	3½d.
4½ in.	1/5½	1/4	4d.
5 in.....	1/7½	1/5½	5d.

O.G. GUTTERS.

3 in.....	1/6½	1/2½	3½d.
3½ in.	1/6½	1/2½	3½d.
4 in.....	1/7½	1/4	3½d.
4½ in.	1/9½	1/6½	4d.
5 in.....	2/1½	1/9	5d.

RAIN-WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/7½	1/1½	1/8
2½ in. "	1/9½	1/4	2/0½
3 in. "	2/1½	1/8	2/5½
3½ in. "	2/6½	1/11½	2/10½
4 in. "	2/11½	2/4½	3/5½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6fts plain	3 0½	2 2½	2 8
2½ in. "	3 6½	2 5½	3 3½
3 in. "	4 2½	2 8	4 0½
3½ in. "	4 7	3 3½	4 8½
4 in. "	5 1	3 9½	5 5

L.C.C. COATED DRAIN PIPES—London Prices ex works.

	Pipe.	Bends stock angles.	Branches stock angles.
	s. d.	s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 9	5 8	8 10
4 in. " "	6 3	6 8	11 4
5 in. " "	7 6	11 6	18 2
6 in. " "	8 10	14 4	23 5

Per ton in London.

	£ s. d.		£ s. d.
IRON—			
Common Bars.....	13 10 0	to	14 10 0
Staffordshire Crown Bars—good merchant quality	14 10 0	..	15 10 0
Staffordshire "Marked Bars"	17 0 0	..	18 0 0
Mild Steel Bars	12 0 0	..	13 0 0

METALS (*Continued*).

	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, basis price	12 10 0	..	13 10 0
Hoop iron, basis price	16 10 0	..	17 10 0
Galvanised	31 0 0	..	32 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g...	14 10 0	..	15 10 0
" " " 24 g...	15 10 0	..	16 10 0
" " " 26 g...	17 10 0	..	18 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g...	21 0 0	..	22 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.....	22 10 0	..	23 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g...	24 10 0	..	26 10 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	20 10 0	..	21 10 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	21 0 0	..	22 0 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	23 0 0	..	24 0 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker ..	23 10 0	..	24 10 0
Best Soft Steel Sheets, 22 g. and 24 g. ..	24 10 0	..	26 10 0
Best Soft Steel Sheets, 26 g.	26 0 0	..	27 0 0
Cut Nails, 3in. to 6 in. (under 3in. usual trade extras.)	20 10 0	..	22 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/4 to 1/7 per foot super.

LEAD, &c.

(Delivered in London.)

	£ s. d.
LEAD—Sheet, English, 4 lb. and up	50 0 0
Pipe in coils	50 10 0
Soil Pipe	53 10 0
Compo pipe.....	56 10 0

NOTE—Country delivery, 30s. per ton extra ; lots under 3 cwt., 2s. per cwt. extra and over 3cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	35	0 0	—
Do., ex country, carriage forward ..... per ton	36	0 0	—

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

NEW RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1½ in.	1¼ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2in.
7/6	11/6	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.P.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1½ in.	1¾ in.	2 in.	3 in.	
8 lbs. P. traps ..	33/-	41/-	56/-	101/-	per doz.
8 lbs. S. traps ..	35/-	45/-	66/-	126/-	"

COPPER—	£ s. d.		
Strong Sheet ....per lb.	0 2 3	..	—
Thin " .... "	0 2 4	..	—
Copper nails .... "	0 2 3	..	—
Copper wire .... "	0 2 4	..	—
TIN—English Ingots ..	0 2 6	..	—
SOLDER—Plumbers' ..	0 1 2	..	—
Tinmen's	0 1 4	..	—
Blowpipe	0 1 5	..	—

PAINTS, &c.

	£ s. d.
Raw Linseed Oil, in pipes .....per gallon	0 4 2
" " " in barrels .... "	0 4 4
" " " in drums .... "	0 4 7
Boiled " " in barrels .... "	0 4 7
" " " in drums .... "	0 4 10
Turpentine in barrels ..... "	0 5 5
" in drums (10 gall.) ... "	0 5 8
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	58 0 0

GENUINE WHITE LEAD PAINT—

"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Spedol" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered 80 0 0

Red Lead, Dry (packages extra)....per ton	52	10	0
Best Linseed Oil Putty.....per cwt.	0	9	0
Filocol .....per cwt.	0	5	6
Size, XD Quality.....fkn.	0	5	6

[Continued on next page.]

" The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per Ft.		Per Ft.
15 oz. fourths ..	3½d.	32 oz. fourths	8½d.
15 „ thirds	4½d.	32 „ thirds	10½d.
21 „ fourths ..	5d.	Obscured Sheet, 15 oz.	4d.
21 „ thirds	6½d.	„ „ 21 „	5½d.
26 „ fourths ..	6d.	Fluted 15oz. 6½d., 21oz.	9½d.
26 „ thirds	7½d.	En'lled 15oz. 5½d., 21 oz	7½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
3/16 Rough rolled	5½d
¼ Rough rolled	5½d
Figured Rolled, Baltic, Oceanic, Arctic, Stippolyte and small and large Flemish white ..	6½d.
Ditto, tinted	9d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

VARNISHES, &c.

		Per gallon £ s. d.
Oak Varnish	Outside	0 14 0
Fine ditto	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best Ditto	ditto	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal Flatting	ditto	1 0 6
Hard Drying Oak.....	ditto	0 18 0
Fine Hard Drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 10 0
Best Black Japan		0 10 6
Oak and Mahogany Stain (water).....		0 12 0
Brunswick Black.....		0 7 6
Berlin Black		0 14 6
Knotting (patent)		1 5 0
French and Brush Polish		0 17 0
Liquid Dryers in Terebine.....		0 9 0
Culrass Black Enamel.....		0 7 0

PATENTS

APPLICATIONS PUBLISHED.*

221,847.—P. Kavanagh: Means for detachably securing articles to floors.

221,853.—E. C. R. Marks (Wiggin's Sons Co.): A plaster and a process of controlling the setting of plaster, an accelerator therefor, and a process of making such accelerator.

221,857.—W. H. Clegg and G. Whittaker: Manufacture of artificial stone or marble and the reproduction of articles therefrom.

221,867.—T. F. Bailes: Cranes.

221,871.—D. M. Findlay: Strengthening or reinforcing wood, and wood compositions.

221,907.—J. Lyons & Co., Ltd., and C. F. Archer: Furniture castors.

221,935.—Chatwood Safe Co., Ltd., and H. S. Bruckshaw: Strong-rooms.

221,987.—W. A. Hiscox: Device for drying broken stone.

221,993.—Doulton & Co., Ltd., and G. Walker: Self-closing lavatory tap.

213,222.—A. Rosa: Machine for making blocks.

222,024.—G. Petrie, and Petrie & McNaught, Ltd.: Heating systems.

222,532.—E. Dixon (P. Claxton): Fastenings for doors and boxes.

222,540.—R. G. Cottier: Machine or device for laying bricks in building operations.

222,577.—G. W. Berry and Berry Hinge, Ltd.: Manufacture of hinges of the flat or plate kind.

222,585.—J. J. Rawlings and Rawlplug Co., Ltd.: Tubular plugs for walls.

222,592.—J. Lyons & Co., Ltd., and J. Crook: Collapsible tables.

222,603.—F. K. Kayte: Seat adjustments.

222,609.—E. A. Smith: Building of concrete walls suitable for dwelling-houses.

222,746.—G. W. R. Nobel: Concrete blocks and slabs.

222,774.—C. Carnes: Pre-cast concrete building blocks.

222,192.—W. H. W. Idris: Method of making floors and tennis courts.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

THE SCOTTISH BUILDER

GLASGOW ACADEMY WAR MEMORIAL

THE Glasgow Academy War Memorial, which has been erected at the junction of Colebrooke-street and Great Western-road, was unveiled on November 11. The memorial is the third and final instalment of the scheme, which embraced the endowment of the school, the erection of panels within the school containing the names of those who died on service, and the incorporation of a memorial in the enclosing wall of the grounds bearing a commemorative inscription. The unveiling was performed by Colonel Sir Robert C. Mackenzie, chairman of the governors. The memorial is incorporated in, and forms a prominent feature of the school wall at the western angle on Great Western-road. From the piers at each end the wall sweeps inward in crescent shape to a large dedication panel forming an elevation in the wall. The panel is surmounted by a frieze, on which is carved a memorial wreath. Fluted pilasters are placed on each side bearing the palm branches of victory and the dates of the foundation of the school and its reconstitution, 1845 and 1923. The memorial was designed by Mr. A. N. Paterson, of Messrs. Paterson & Stoddart, architects, Glasgow.

Dalkeith High School.

Midlothian is about to spend £16,500 on extensions to Dalkeith High School, making provision for housecraft, handcraft, chemistry, physics, art, gymnasium, and staff rooms.

Glasgow Housing.

At a recent meeting of the Glasgow Dean of Guild Court authority was given for the erection of about 380 additional houses in the city. An important application was by the Corporation, and had reference to the extension of their Hamiltonhill scheme by 350 tenement houses of two and three apartments, with scullery and bathroom.

LEITH DOCKS

PLANS of dock extension on the lines of the Commissioners' decision of last February were generally approved at a recent meeting of the Leith Dock Commission. The plans show several changes on the previous ones. In a report Mr. A. H. Roberts, M.Inst.C.E., the Docks Engineer, stated that under the plans the breakwater would be 400 ft. longer than was proposed under the 1913 Act authorising extension An additional ten acres of space would thus be secured. There would be 17 acres of water space in the first instalment of the proposed dock. Of the total area to be reclaimed about eight acres would lie to the westward and about 34 acres to the south and east of the new dock. To the south a lagoon would be left to be gradually reclaimed by deposits of dredgings in preparation for the ultimate completion of the northern arm of the dock. General estimates prepared showed that the breakwater would cost £426,000, and that the dock works might be carried out for about £655,000, the existing borrowing powers—£1,200,000—would, therefore, be sufficient to cover the work of the next ten years.

Alloa's New Post Office.

A commencement has recently been made with the clearing of the site at Mansfield, Bedford-place (opposite the War Memorial), for the erection of a new Post Office for Alloa. The new Post Office will be of one story to the front, with under-buildings behind, and the cost is estimated at between £6,000 and £7,000. Mr. R. M'Gee, builder, Tillicoultry, is the contractor for the whole of the work.

Fettercairn Fire.

Damage estimated at between £2,000 and £3,000 was done in the courtyard of Fettercairn Distillery recently. A large wooden building, measuring 120 ft. by 80 ft., was completely destroyed.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Brick-layers' Labourers.	Plas-terers' Labourers.
Aberdeen	1/8	1/8½	1/8	1/8	1/8	1/8	1/6	1/0½	
Airdrie	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3	
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2½ to 1/3½	
Arbroath	1/7	1/7	1/7	1/7½	1/7	1/7	1/5½	1/1½	
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Bathgate	1/8	1/8	1/8	1/8½	1/8	1/8	1/6½	1/2 to 1/3	
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-	
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Coatbridge	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3 to 1/3½	
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3½	
Dumfries	1/0	—	1/6	1/0	1/6	1/6	1/6	1/3½	
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Dunfermline	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3½	
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½	
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/5½	1/2½	
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2	
Galashiels	1/6½	1/5½	1/6½	1/7	1/6	1/6½	1/6	1/2	
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½	
Greenock	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/0½ to 1/3½	
Hamilton	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½	
Hawick	1/6	1/6	1/6	1/6-1/6½	1/6	1/6	1/6	1/2	
Helensburgh	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½	
Inverness	1/5	—	1/4½	1/4	1/5	1/5	1/4	11d. to 1/2	
Kilmarnock	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½	
Kirkcaldy	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3½	
Kirkwall	1/5	1/5	1/4	1/4	1/5	1/4	1/4	1/0	
Lanark	1/8	1/8	1/8	1/9	1/8	1/8	1/6	1/- to 1/3	
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½	
Motherwell	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½	
Perth	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3	
Stirling	1/3	1/8	1/8	1/8	1/8	1/8	1/6½	1/3½	
Stirlingshire (Eastern District)	1/8-1/10	1/8-1/10	1/8	1/9	1/7	1/8	1/6½	1/3½	
Wishaw	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 834.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	6
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	32	0
Add if in underpinning in short lengths	" "	7	0
Add if in floors 6 in. thick	" "	3	3
Add if in beams	" "	3	9
Add if aggregate 1 : 2 : 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	10	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	4	3
Three-quarter-inch vertical damp course	" "	8	6
¾ inch on flats in two thicknesses	" "	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	2

MASON.

York stone templates fixed	per foot cube	13	0
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Portland stone fixed	" "	20	0

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	"	80	0
Do. 24 in. × 12 in. Do. Do.	"	90	0

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	5	0	
Do. joists	" "	5	6	
Do. roofs, floors and partitions	" "	6	0	
Do. trusses	" "	8	6	

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	35/6	40/-	45/-	72/-

Flat centering for concrete floor, including struts or hangers	" "	50	0	
Do. to beams	per ft. sup.	1	0	
Centres for arches	"	1	6	
Gutter boards and bearers	"	1	0	

FLOORING.		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		44/6	53/-	60/6
Do. tongued and grooved	"		49/-	57/6	65/-
Do. matchings	"	45/-	51/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup	1/7	1/8	1/11
Deal shelves and bearers	"	1/4	1/6	1/9
Add if cross tongued	"	2d.	2d	2d.

STAIRCASES.

		1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets		2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed		1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting in to floor and	
Casement stays	1/2	making good	19/-
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	"	19	0
Do. stanchions	"	21	9
In roof work	"	27	6

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt	63	0
Do. Do. in flats	"	62	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft run.	0	6
Soldered seam	" "	1	6
Copper nailing	" "	0	6

		¼"	½"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/2	1/9	2/0	3/4	4/0	
Do. service	"	1/8	2/2	2/7	3/10		
Do. soil	"						6/9
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"				14/7	19/6	
Bib cocks and joints	"	6/4	9/7	15/4	41/-		
Stop cocks and joints	"	15/4	17/2	25/8	64/-		

PLASTERER.

			s.	d.
Render, float and set in lime and hair	per yard sup.		2	4
Do. Do. Sirapite	" "		2	7
Do. Do. Keen's	" "		3	7
Add sawn lathing	" "		1	7
Add metal lathing	" "		2	6
Portland cement screed	" "		1	11
Do. plain face	" "		3	3
Mouldings in plaster	per 1 girth		0	1½
One-and-a-half granolithic pavings	per yard sup.		5	9

GLAZIER.

21 oz. sheet plain	per foot sup.	0	8
26 oz. Do.	" "	1	0
Obscured sheet	" "	1	1
¼ in. rolled plate	" "	0	9
¾ in. rough rolled or cast plate	" "	0	10½
¼ in. wired cast plate	" "	1	4

PAINTER.

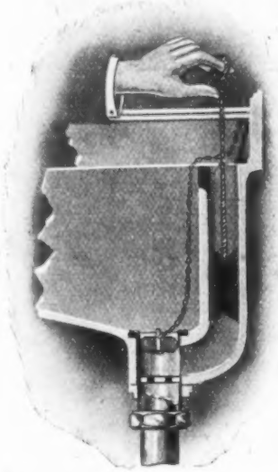
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	0
French polishing	"	1	2
Preparing for and hanging paper	per piece	2/—to	4/

* These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TRADE NEWS

The Riverina Overflow.

THE lavatory overflow and waste are the sanitary centre of the lavatory. On them depends the safety, sweetness, and cleanliness of the apparatus. But there are more insanitary wastes and overflows on the market than of the sweet and cleanly ones. The accessible safety overflow is very simple to construct, although a little more costly, but it is easily cleansed and kept sweet, fresh air passing throughout; besides, it can be periodically cleansed with a suitable brush. Nearly twenty-eight years ago Messrs. Morrison, Ingram & Co., Ltd., of Hygeia



Works, Manchester, patented the Riverina circular overflow shown in the diagram, and it is still, they claim, the premier thing of the kind to-day. The Clænairo overflow, though oval, is on the same lines, and is quite safe for any pressure of water. It is important to be certain that the overflow is *safe*. The saving in price between an unsafe and perfectly safe, dependable lavatory is not worth the risk. The salient point for every proprietor to make sure about before ordering lavatories is: are the overflow and waste safe and dependable? In any case, every lavatory fixed ought to be tested to the *maximum* pressure of hot and cold water running through ½-in. taps to prove the fitness of the overflow, waste, and trap allowing a safe margin with the plug in.

We have received from Messrs. The British Steel Piling Company, Ltd., 54A, Parliament-street, Westminster, S.W.1, a bulletin—which can be had on application—describing their system of "Vibro" cast *in situ* concrete piles. The principal merits of the "Vibro" system are its economy (it is, they state, 50 per cent. cheaper than any system of pre-cast concrete piles); its rapidity (a 40 ft. pile can be completed in one hour); and the solidity and uniformity of the piles produced. These are cast *in situ* and are firmly keyed into the ground throughout their length. Voids are impossible. Every pile is, they state, a perfect column of compressed, solid concrete, and all guess-work is eliminated. The piles are cast in the ground the required depth, and owing to the mode of casting, fit the holes they occupy perfectly. It is unnecessary to know beforehand what depth of piling is required, and "Vibro" piles can be driven to any depth, and need not be reinforced. "Vibro" piles cannot be damaged in driving; a valuable consideration.

We have received from Messrs. Clark, Hunt & Co., Ltd., Shoreditch, E.1, a brochure which gives a brief summary of the growth and present range of this business from 1828–1924, nearly a hundred years of continual progress. Starting from—if we may say so—the humble origin of a cabinet ironmonger, it has developed into an organisation which includes general builders' ironmongery of every description. A visit to this well-known house is certainly the only way fully to realise its potentialities.

Messrs. Jenson & Nicholson, Ltd., Goswell Works, Stratford, E.15, send us a manual on the treatment of damp walls. Those who have had trouble with this difficult problem will be interested in the notes on the preservation of masonry, brickwork, and cement work, &c. Their preparations are made for both inside and outside use, and although the most effective way of treating a damp wall is by prevention, it often happens that such a course is not practicable. Their object in issuing this booklet is to assist those engaged in the prevention and cure of damp in selecting the right material for the particular work in hand. "Nepthlene," "Fossolite," "Sealite," and "Anti-dampine," are all preparations specially manufactured by this firm with this object in view.

Messrs. Perkin & Co., Ltd., Leeds, inform us they have recently fitted up a travelling workshop containing Spindle Moulder, &c., which they are sending round the country demonstrating their "Rapid" Stair Housing Attachment. The appliance is designed, primarily, for the economical production of stair housings, and on this particular work shows a saving in time, they state, of 90 per cent. against hand work, as well as a very much better finish and greater accuracy. A pair of strings, which would take a capable joiner eight hours to mark off and trench by hand, may be completed in thirty minutes with practically no marking off or previous preparation. The cost of the apparatus, it will be seen, is therefore saved in the production of less than twelve staircases. It consists of an adjustable graduated templet which may be readily set to trench stair strings between the limits of 5 in. to 9½ in. rise and 7 in. to 12 in. tread. The templet is designed to do a pair of strings, *i.e.*, R.H. and L.H., without resetting, thus ensuring perfect matching of the two strings, besides saving the operator's time.

OBITUARY

THE death occurred recently, at Westbrooke, Hexham, of Mr. Samuel Andrew Short, aged 61, founder and head of the firm of Messrs. Samuel A. Short & Son, builders' furnishers hardwaremen, and joinery tool warehousemen, of Newcastle.

The death has occurred of Mr. William Edward Isaacs, builder and contractor, Sketty (Glam), at the age of 48 years.

Mr. Thomas Evans, builder, Penlline-road, Whitchurch (Glam), has died at the age of 61 years.

The death has taken place of Mr. John Pritchard, Brynterion, Risca, Mon, builder. He built a number of municipal offices and churches in the area.

Kirk Sandall Church Hall.

A new church hall, erected at a cost of £3,500, was recently opened at Kirk Sandall by Lord Cozens Hardy. The joint architects of the hall are Professor Abercrombie, of Liverpool, and Mr. T. H. Johnson, of Priory-place, Doncaster. It is constructed of rustic-faced bricks which were made at Messrs. Pilkington Bros. brickworks, at St. Helens. There are stone dressings, and a red tiled roof, surmounted by a bell cote. The hall has seating accommodation for 250 people, and provision has been made for a gallery to be inserted at a future date. Electric lighting has been installed, and the current will be obtained from Messrs. Pilkington's works. There is a low pressure hot water system of heating. The contractors for the building were Messrs. Johnson & Moore, of Balby-road, Doncaster.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

ALLOA.—For erection of a new Post Office at Mansfield, Bedford-place, for H.M. Office of Works:—
*R. M. Gee, Tillicoultry £7,000

BACKFORD.—Canal bridge reconstruction, for Cheshire C.C.:—
Ferro-concrete—
*W. H. Brocklesby, Birkenhead.. £2,527 19
Steelwork—
*Joseph Parks, Northwich 1,108 0

BARNT GREEN.—Storm water overflow, for the Bromsgrove R.D.C.:—
Wm. Thorpe, Hollywood £502 8 0
Geo. Macdonald, Hunt & Co., Ltd., Harborne..... 478 19 8
Edward Woodward, Rubery 454 9 0
C. G. Huins & Sons, Redditch.... 450 0 0
Tilt Bros., Bromsgrove 448 7 6
*J. & A. Brazier, Bromsgrove 367 11 6

BRIERLEY HILL.—Laying out new cemetery:—
Geo. Macdonald, Hunt & Co., Ltd., Harborne £2,472 17 4
*W. H. Rogers, Wolverhampton 2,387 8 6

BROMSGROVE.—For erection of a market hall, for the U.D.C.:—
*Jas. A. Brazier, Ltd..... £7,600

BROXBOURNE.—For rebuilding bridge, for the Hertfordshire C.C.:—
W. & C. French, Buckhurst Hill £2,369 16 3
P. R. Paul, Waltham Abbey .. 1,977 2 2
*A. E. Farr, London 1,705 11 6

BUCKLOW.—For construction of 337 yards of 9 in. stoneware pipe sewers, for the R.D.C. Mr. R. C. Cordon, surveyor, 25, Station Buildings, Altrincham:—
*Smith & Briggs, Ltd., Manchester .. £449

BURY.—For erection of four houses, for the St. Edmunds T.C.:—
*Sewell £1,770

BUXTON.—For erection of 14 houses, for the T.C.:—
*R. Kershaw & Sons..... £521 per house

BUXTON.—For erection of 11 houses, for the T.C.:—
*T. Lowe & Sons ..... £521 per house

CAERPHILLY.—For erection of a ferro-concrete bridge over the River Rhymney at Pontypandy Farm, for the U.D.C.:—
*Watkin Williams..... £350

CANTERBURY.—For extension of the buildings at the Electricity Works, for the T.C.:—
*Dadds £1,286

CROOK.—For superstructure of new class-rooms for infants at Sunniside Council school, for the Durham C.C.:—
*Walton Bros. £697 15

DURHAM.—Construction of bridge parapets, for C.C.:—
*Messrs. Carron & Co., Falkirk—
Lambton Bridge £1,343 14 0
Croxdale bridge..... 1,421 5 6
Axwell Park bridge 872 12 0

GLASGOW.—Additional accommodation at Mearnskirk Sanatorium, for T.C.:—
Slater's Work—
‡Chas. Wilson £3,530 11 4

GLASGOW.—Painter work at Patrick Library, for T.C.:—
*Macfarlane & Smith..... £437

GLASGOW.—Engineering work at the Whiteinch Baths, for the T.C.:—
‡George Monro £6,999 5

GREENOCK.—For deepening and improving of Garvel Graving Dock, for the Harbour Trust:—
*Brins & Co., Newcastle.

HARWICH.—For erection of sub-stations, for the T.C.:—
‡Fisher & Woods £700

HOLYWOOD.—Construction of water storage tank at the Sanatorium, for the Durham C.C.:—
‡G. J. Gibson, Middlesbrough.... £898 10 10

HOUGHTON-LE-SPRING.—For erection of a secondary school, for the Durham C.C.:—
*A. V. Clerey, Sunderland £18,899

HUNGERFORD.—For erection of eight cottages, for the D.C. :—
*J. T. Gibbs ..... per house £405

HUNGERFORD.—For erection of six cottages at Eastbury, for the D.C. :—
*J. Wooldridge & Son .....per house £435

LITTLE DOWNHAM.—For construction of a pumping station, for the Littleport and Downham Drainage Committee. Mr. E. J Silcock, engineer, 25, Victoria-street, S.W. 1 :—
*S. S. Ambrose & Son, Ely..... £4,650

LONDON.—For terrazzo flooring at Limehouse generating station, for the Stepney B.C. :—

W. B. Simpson & Sons.....	£353	10	0
Art Pavements & Decorations, Ltd.	342	12	0
Jos. F. Ebner	334	19	6
McIvor & Sons, Ltd.....	333	8	6
*Fennings & Co., Ltd.....	307	4	6

(All of London.)

MANCHESTER.—Widening the Slade-lane bridge over the L.N.E.R., for the T.C. :—
*Thomas Wrigley.

NORTH SEATON.—For construction of a new steel viaduct, for the L. & N.E.R. Co. :—
*The Cleveland Bridge & Engineering Co., Ltd., Darlington.

PERIVALE.—For construction of a bridge over the Brent for the Middlesex C.C. :—
*Holloway Bros., Ltd. £6,302

PONTEFRACT.—For the erection of a workshop and store at Airedale, for the R.D.C. :—
*E. Cockshaw £150

PORTCHESTER (HANTS.).—For erection of bungalow, for Mr. James Hatch, Mr. S. E. White, architect, 73, Waverley-road, Southsea :—

Juniper & Coombes, Portsmouth.....	£1,811
John Lay & Co., Portsmouth	1,515
M. Coghlan, Southsea	1,481
*G. Harmer, Portchester	1,395

(*Accepted subject to modification.*)

SHILBOTTLE.—For erection of a Council School at the Colliery, for the Northumberland E.C. Mr. C. Williams, Director of Education, The Moot Hall, Newcastle-upon-Tyne :—
*T. Lumsden, Newcastle-on-Tyne..... £6,890

SHIPLEY.—For erection of a Post Office and Telephone Exchange, at Otley-road, for H.M. Office of Works :—
*Wm. Irwin & Co., Ltd., Leeds.

SMETHWICK.—For erection of a garage, for the T.C. :—
*W. Jackson, Oldbury..... £335

SOUTHEND-ON-SEA.—For erection of 43 bathing huts and eight pay-boxes, for the T.C. :—
Borough Engineer..... £2,328

SOUTHEND-ON-SEA.—For erecting concrete platforms, for the T.C. :—
*W. J. Cearns £2,328

WALLASEY.—For erection of 56 houses on Poulton-road and Surrey-street sites, for the T.C. :—
‡The Dawson Housing, Ltd., Birkenhead £28,400

WARE.—For erection of a house for the Medical Superintendent of the Hertfordshire C.C., at the Ware Park Sanatorium :—
*H. Norris & Son, Hertford £2,526

WEST STANLEY.—For internal and external and renovation of Alderman Wood secondary school, for the Durham C.C. :—
*Weddall, Hindmarsh £389 15

YORK.—For painting various places, for the T.C. :—
*T. Oxtoby & Son..... £334 1 9

YORK.—For painting of certain properties belonging to the T.C. :—
*J. Dodsworth & Sons £219 3 6

Italian Building.

Signor Mussolini has recently approved of a scheme for the construction in Rome of an edifice "to the glory of Fascism," which it is proposed to name "The Eternal." The building, which will be over 900 ft. high, will include an hotel, a theatre, a concert hall, a covered-in-gallery, &c. The building, for which a site has not yet been chosen, will, it is stated, cost four hundred million lire (nearly £3,900,000).

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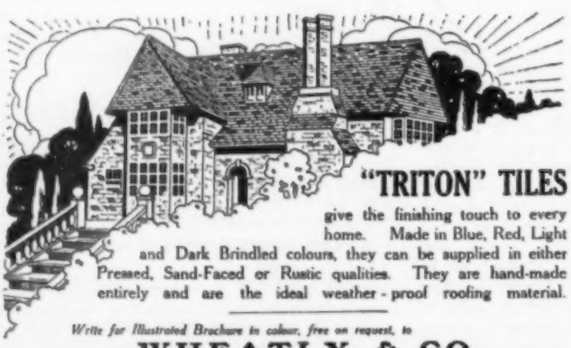
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